

# Report of the Section of Teachers of Pharmacy Practice Task Force on Faculty Resource Development and Renewal<sup>1</sup>

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## INTRODUCTION

The academic pharmacy community is facing tremendous challenges and opportunities during the foreseeable future. We are adopting the pharmaceutical care practice paradigm and are steadily moving toward a single entry-level degree, a true turning point for the profession. In a recent article, AACP President Leslie Benet aptly characterized turning points in history as “Best of times (worst of times) scenarios when viewed directly, without the benefit of hindsight” (1). Some members of the academy would say that these are the best of times, the age of wisdom in pharmaceutical education. Some members would disagree. External pressures, in the form of accrediting bodies and national pharmacy and trade organizations, are treading heavily on the academy prerogatives of curriculum and degree self-determination. Impending health care reforms and shrinking federal and state financial support are shaking the very foundations of health care delivery, and thus, health science education.

During these tumultuous times, there are two constants. First, academia's customers—the boards of trustees, university presidents, alumni, parents, students, patients and the others we serve—continue to demand excellence in our products. Pharmacy colleges and schools are being asked to do more, or at least as much as before, with fewer human and financial resources. Second, the faculty who provide these products continue to serve in the same systems, and operate within the same paradigms, in which faculty have traditionally been trained. It is clear that the paradigms must change or the age of foolishness will be upon us.

The membership of the American Association of Colleges of Pharmacy has contemplated shifting two major paradigms in pharmaceutical education: (i) broadening the definition of scholarship, and (ii) educating our students using the pharmaceutical care model to enable them to accept the responsibility for drug therapy outcomes. These paradigm shifts will require significant changes in the professional lives of our current faculty, who are being asked to share in the vision. Further, we preach balance between the personal and professional lives of the faculty, but ask them to exist within reward and recognition systems that prohibit or inhibit such balance. William Butler Yeats, Irish poet, wrote, “the intellect of man is forced to choose perfection of the work or of the life.” In modern terms, burnout is a real

hazard for dedicated, successful pharmacy practice faculty who are being asked to be triple threats—proficient in teaching, research and patient care.

An article on careers in science described the “new scientist”—a person required to meet the rigors of today's academic environment. “The scientist today can no longer get away with just toiling away at the bench. He or she also has to be a politician, a savvy business person, a skilled grantsman, financially alert, computer-wise, and adept in human relations ... Breadth and resourcefulness count for more than narrow expertise as knowledge accumulates so rapidly that old fields die and new ones are born practically overnight. “(2) Clearly, expectations of our faculty continue to increase, and methods for training new faculty must somehow encompass the above skills.

## Challenges for the Pharmacy Practice Academy

There are several critical issues that loom as challenges for academic pharmacy practice. These issues are: How will we identify, recruit, train, develop and retain pharmacy practice faculty needed during the transition to the single entry-level doctor of pharmacy professional degree?; How will we retrain current faculty and preceptors to enable them to teach and practice pharmaceutical care?; How will we maintain the progress made in establishing scholarship, including research, as a fundamental activity of pharmacy practice faculty in the current and future academic environment?; What must we do, as an organization and as individuals, to create systems that provide faculty with sufficient financial, educational and human resources necessary to ensure their personal growth and academic advancement?; and, Why are more pharmacy students not choosing academic pharmacy as a career track, and what must we change in our behaviors and attitudes to enable us to serve more effectively as mentors and role models?

## Opportunities for the Pharmacy Practice Academy

The significant changes proposed for pharmaceutical education, for example, the way we teach, what we teach,

<sup>1</sup> Approved on December 6, 1993, by the AACP Section of Teachers of Pharmacy Practice at a business meeting at the ASHP Midyear Clinical Meeting, Atlanta GA.

and who must teach it(3), will necessitate the allocation of major new resources in the form of new faculty positions, clinical practice settings and research programs. Implementing the recommendations of the Commission to Implement Change in Pharmaceutical Education likely will have the greatest impact on faculty resource allocation in the future(3-6). Clearly, we must use resources wisely to take full advantage of them. We will have opportunities to influence our students' education in new and different ways as we assist them in self-directed learning through mentor-protégé relationships.

In light of imminent health care reform legislation, pharmacists may find themselves uniquely positioned to serve in new roles as health education providers, consultants on medication use, and perhaps even prescribers of the often proposed "third class" of drug products. The pharmacy practice academy must play a proactive leadership role in developing and evaluating curriculum designed to prepare our students for these practice activities.

### **Task Force Charge**

With these challenges and opportunities in mind, Section Chairman Joseph Barone gave the Task Force the following charge in 1991: What steps should be taken to address the scarcity of research-trained pharmacy practice faculty and the predicted shortage of pharmacy practice faculty in general? To effectively address this charge, the Task Force recognized the need to consider the following related questions. What will be the role of residencies and fellowships in the educational process given the impending changes in pharmacy education? How can we develop both junior and senior faculty to prevent frustration and stagnation, maintain productivity, and maximize their retention in a competitive environment? What factors affect the decisions students make regarding career choices, and what impact can pharmacy practice faculty have in shaping these decisions? How will specialization in pharmacy impact the allocation of faculty resources to practice and research positions? How will financial and educational resources need to be allocated among full-time or part-time faculty to meet the teaching, research, and patient care missions of our departments?

In responding to this charge, the Task Force reviewed numerous published documents and reports prepared by other committees and task forces from within AACP, as well as from the American College of Clinical Pharmacy, American Society of Hospital Pharmacists, and other organizations(4-16). We concluded that a great deal of our preliminary work had already been completed in these reports. It was not our intention to repeat either the processes or outcomes of these previous reports, but to apply the assessments and recommendations contained in these reports to the critical issues listed above.

## **ASSESSMENTS**

### **Faculty Recruitment**

When considering the broad issue of pharmacy practice faculty recruitment, a number of factors must be considered. First, the projected need for clinical pharmacists in academia should be examined. Second, the types of pharmacy practice faculty positions that are or will be available will help dictate the qualifications that successful candidates must possess. Third, the adequacy of the potential applicant pool from which to recruit pharmacy practice faculty members is an

important factor, especially as it relates to student recruitment into postgraduate training programs. Finally, the recruitment techniques should be based on well-documented principles and practices that best meet the needs of the college/school, the position, and the future opportunities for professional growth and rewards for the faculty members. These techniques are nicely summarized in the AACP Academic Management System report entitled, "Recruitment and Retention of Faculty: A Faculty Member's Point of View" (17).

**Type(s) of Pharmacy Practice Faculty Positions.** Two reports from the AACP Section of Teachers of Pharmacy Practice Task Force on Faculty Models provide recommendations for the types and responsibilities of pharmacy practice faculty(8,9). The recommendations of the Task Force include both researcher/educator and practitioner/educator pharmacy practice faculty models, in tenure-track or nontenure-track positions. It was recommended that faculty in both models should excel in the areas of teaching and service. The researcher/educators would also include research as their third area of expertise and productivity. The practitioner/educators should include patient care-related activities as their third area of expertise and productivity. If, in fact, colleges and schools of pharmacy adopt these models, then educational or training programs should adequately prepare pharmacists to be qualified for these pharmacy practice faculty roles. The method for assessing the needs of each college/school is described in a subsequent section of this report.

**Projected Need for Pharmacy Practice Faculty.** A 1984 report concerning the education and development of clinical scientists indicated that the "demand for pharmacy practice faculty in academia has leveled off in recent years" (11). In the past nine years since the publication of that report, however, the number of pharmacy schools or colleges that offer or have expanded the capacity of their Doctor of Pharmacy programs has continued to increase. The growth in Doctor of Pharmacy programs places an additional need for, and demand on, pharmacy practice faculty. In a 1989 survey of pharmacy deans, it was anticipated that 430 new pharmacy practice faculty would be needed between 1989 and 1993(13). This projection might be an underestimate given recent developments in pharmacy education. In its November, 1991 Special Report, the AACP Commission to Implement Change in Pharmaceutical Education recommended that all schools/colleges of pharmacy adopt a six year entry-level educational program leading to the PharmD degree(6). This document further states that this change would necessitate enhanced resources by the schools and colleges, including additional faculty in pharmacy practice as well as in the clinical sciences. Therefore, a continuing and likely increasing need for pharmacy practice faculty exists.

**Role of Student Recruitment.** To have an adequate applicant pool for pharmacy practice faculty positions, there must be a sufficient number of qualified persons who are motivated to pursue such positions. To become the educators of tomorrow, talented students must appreciate the advantages of and professional satisfaction to be gained from pharmacy practice faculty positions. Pharmacy practice faculty must serve as role models who attract and motivate students to join their ranks.

The educational process must provide students with the expertise to succeed in pharmacy practice faculty positions. Entry-level pharmacy degree graduates must be critical, independent thinkers. They must have the basic skills necessary to retrieve, critically evaluate, and apply the findings of drug literature to their practice or research, regardless of the subject area involved. Given an adequate number of appropriate post entry-level degree programs, qualified graduates must be willing to pursue them, *i.e.*, positions in programs must not remain unfilled. To accomplish this, students must be motivated to enter careers in academia. This might be facilitated in two ways.

First, students must be exposed to the advantages and professional stimulation of a career in academia throughout their entry-level pharmacy program. This can be facilitated by pharmacy practice faculty portraying our profession to students in a positive light. To gain a true appreciation of the roles of pharmacy practice faculty, students need to be able to work with and observe these faculty, including those in tenure track positions and those conducting significant amounts of research. With the expanding adoption of the six-year entry-level degree program, adjunct or volunteer faculty will have increased opportunities to serve as practitioner/educator role models for students, but should not exclusively provide students with their clinical education or training. A balanced experiential curriculum should be offered to ensure that students are given opportunities to interact with researcher/educator faculty role models as well.

Second, creation of a research/education track in the entry-level degree programs of schools and colleges with a research mission is highly desirable. A select number of students who are academically qualified and express an interest in pursuing advanced education and training can be encouraged to select a research/education track shortly after they enter pharmacy school. In addition to normal coursework, these students could receive structured exposure to the various types of research being performed at the school or college under the guidance and mentorship of pharmacy practice faculty. Students could also be given extra assignments designed to enhance their writing skills. An education-related project could be required of each student under the direction of a pharmacy practice faculty member. Examples of such projects include designing a section of a course (real or as an exercise in the student's area of interest), or working on part of a computer-assisted instruction project. With this type of track, students might be stimulated to pursue the diversity of the experiences inherent in a faculty position.

**Role of Residencies and Fellowships.** As the profession and academia move toward an entry-level PharmD degree, the role of residencies and fellowships becomes paramount. Students graduating with an entry-level degree should be able to provide the basic elements of pharmaceutical care to patients. Whether this goal can be adequately accomplished within a six year curriculum has been questioned(18). Another point in question is whether graduates at the time of graduation should be fully competent or just have the potential to provide contemporary pharmaceutical services. If one supports the latter approach, it would be necessary to provide all graduates with the opportunity to complete postgraduate residency training. At this point in time that goal is not achievable.

Pharmacy practice has become more and more specialized. Over the last 10 to 15 years, we have seen a change in the requirements needed to qualify for pharmacy practice positions offered by hospitals. Fifteen years ago, having the PharmD degree was all that was necessary to open the door to job opportunities in hospital pharmacy, academia and industry. Presently, we more often see that a particular position may require the PharmD degree and appropriate residency (or fellowship) training. It is likely that board certification, *e.g.*, pharmacotherapy, nutrition support, etc., will be required for some positions in the near future.

Assuming that academia will agree that graduates from entry-level PharmD programs should be able to provide the basic elements of pharmaceutical care, we are left with the question of how to provide education and training for advanced level practitioners. Students graduating from entry-level programs will require additional education and training to meet the competencies required for the advanced level positions which are critically important in every practice setting. These residencies should build upon a strong foundation provided by the degree program, so that the resident can focus on refining the knowledge and skills needed to practice at an advanced level. Residency programs should *not* provide remedial experiences for degree programs that cannot meet high standards.

The American Society of Hospital Pharmacists (ASHP) has pioneered pharmacy residency education. Until 1992, ASHP formally accredited three types of programs: general hospital residencies, clinical residencies and specialized residencies. In 1991, ASHP announced new accreditation standards for the Residency in Pharmacy Practice(19). Separate hospital and clinical residencies are no longer recognized, and are being consolidated to meet these new standards.

During the 1992 transition from separate hospital and clinical residencies to a single pharmacy practice residency, ASHP recognized 249 residency programs (166 pharmacy practice, 83 specialty). The number of residency graduates in 1992 totaled 476 (205 hospital, 160 clinical, 24 pharmacy practice and 87 specialty) (20). Recent growth in residency programs has been in the area of specialized residencies. Over the last 10 years, the number of trainees from hospital residencies has declined while the number of trainees in clinical residencies has increased. It is unclear how the merger of the hospital and clinical residencies into the pharmacy practice residency will affect the number of applicants, graduates or programs, or whether significant growth will occur in the number of residency programs.

In addition to the 249 programs accredited by ASHP, the 1993 Directory of Residencies and Fellowships published by the American College of Clinical Pharmacy lists approximately 50 residencies that are not designated as being accredited and approximately 100 fellowship programs(21). Therefore, it would appear that the total number of advanced training programs (residency or fellowship—estimated to be no more than 450) is extremely limited at this time. In 1993, the number of trainees completing the ASHP accredited programs will be approximately 514.<sup>2</sup> If all the other listings were filled and trained 1.5 individuals per site, (which is most likely a significant overestimation), there would be about 725 advanced trainees produced each year. Thus, there are currently *less than* one available ad-

<sup>2</sup> Personal Communication, W. A. Narducci and Sr. Mary Louise Degenhart, American Society of Hospital Pharmacists, June 1, 1993.

vanced training program for every 10 graduates from pharmacy school(22). Although enrollments are expected to decline somewhat with implementation of entry-level PharmD programs, there will still be a shortage of post-graduate education programs needed to meet future practice needs.

Most full-time academic positions in departments of pharmacy practice now require residency and/or fellowship training. For those individuals pursuing tenure track positions, fellowship training focused on developing research skills and experience is crucial. The individual completing a fellowship program should have the basic skills to become an independent researcher. The number of fellowship programs is severely limited at present and dedicated funding or outside sources of funding are almost nonexistent. Both ASHP and ACCP have competitive fellowship awards, however, there are fewer than 15 available each year.

As the academic community moves toward an entry-level PharmD degree, the number of postbaccalaureate PharmD graduates will diminish. Advanced level education and training will thus fall almost exclusively upon residency and fellowship programs. These programs will be responsible for producing practitioners who are able to provide sophisticated and specialized pharmacy services and who qualify for researcher/educator positions. Although funding for residencies is usually derived from the institution and/or patient care revenues, it will be necessary for academic institutions to help community-based practitioners develop residencies. A concerted effort must also be made by academic institutions to foster the growth of fellowship training programs. Colleges/schools of pharmacy should provide dedicated, recurring resources for postdoctoral fellowship positions. The American Association of Colleges of Pharmacy should continue fostering the development of financial resources used to support research fellowships in clinical pharmacy for graduates of PharmD programs similar to the American Foundation for Pharmaceutical Education program initiated in 1993.

**Role of Graduate Programs.** Several colleges/schools offer master of science and/or doctor of philosophy programs in pharmacy practice areas. The number of graduates from these programs have been limited, and their impact on pharmacy practice and research has not been quantified. Nevertheless, this educational model will likely continue to evolve and hopefully will be assessed for future impact on the pharmacy practice academy. Since the role of graduate programs was not included in the Task Force charge and has been addressed in other forums, no further discussion of this topic was considered to be necessary.

**Impact of Specialization.** The movement toward pharmacy specialization began with the establishment of the Board of Pharmaceutical Specialties (BPS) in 1976. Currently, four practice areas are now recognized by BPS, namely, nutrition support, nuclear pharmacy, pharmacotherapy and psychopharmacy. Although not formally recognized as such, pharmacy practitioners also specialize in the areas of infectious disease, geriatrics, pediatrics, oncology, drug information, toxicology, and others. Thus, specialization refers to differentiated knowledge as defined by the Board of Pharmaceutical Specialties. However, specialization has also been traditionally and commonly defined as different practice environments, that is, hospital, community, long term care, etc. In order to insure that the profession does not

become fragmented on the basis of these different practice areas, a 1990 conference devoted to the discussion of specialization in pharmacy practice was co-sponsored by AACP, ACCP, APhA and ASHP. Two of the issues discussed at this conference have particular relevance to the impact of specialization on faculty resources. They are manpower considerations, and education and training of pharmacy specialists.

The formal structure for pharmacy specialization is being debated at this time. Several models have been proposed. One model which uses a therapeutics focus to define a practice specialty, for example, oncology or infectious disease, may be inflexible and may have a significant amount of overlap with other specialties. In a second model, practitioners in the area of infectious disease, for example, would be considered a subspecialist under the umbrella of pharmacotherapy specialist(23,24). This may be a more appropriate model since all subspecialists should have basic pharmacotherapeutic skills.

As pharmacy develops its specialty practice structure, it should observe the lessons that have been learned by medicine. Subspecialties within medicine have grown to such an extent that shortages of primary care providers now exist. In developing its specialization structure, the pharmacy profession should take measures to insure that primary care is an area of focus in both entry-level generalist and post-graduate specialist education(23).

Despite the lack of an established structure for pharmacy specialization, the concept of developing an area of practice focus is already being supported by specialized residencies and ASHP's specialty practice groups (SPGs). In the immediate future, pharmacy specialties will likely grow in response to need, and specialty status will be achieved through residency and fellowship training. Therefore, we can examine the issue of manpower by looking at the current availability of training programs for pharmacy specialists. Ultimately, the allocation of faculty resources will be dependent upon the available supply of specialty practitioners/researchers.

Seven factors that will influence the supply of pharmacy specialists were described by Knapp and Sorby(25). Several of these factors will have a direct bearing on allocation of faculty resources. First, "the growth of specialty programs will change the hierarchy of the pharmacy work force and influence the rate at which the specialist cadre forms" (25). A projection of the specialist cohort for the next two decades was made under two different assumptions. Under assumption A, the number of specialists will be driven by the number of PharmD graduates, most of whom, will have graduated from entry-level degree programs. A fraction of these graduates will elect to go into one year residency/fellowship training programs. A fraction of this latter group will continue their training by pursuing advanced residencies/fellowships and thereby obtaining specialty status. In this model, it is projected that there will be 6844 specialists by the year 2000, 821 of whom are new practitioners, accounting for 3.7 percent of the total pharmacy work force. Although this is a significant increase from 0.7 percent in 1990, it is unlikely that this number of specialist practitioners will have much impact on the total health-care system. Hospitals, long-term care and managed care facilities, pharmaceutical companies and academic institutions will be competing for this small pool of specialists. Using the same assumptions for projections for the years 2001-2010, the

number of specialists by 2010 will be 15,052, comprising 6.8 percent of the total pharmacy work force.

Using assumption B, in which opportunities will be extended to working pharmacists to obtain a postbaccalaureate PharmD degree, and to complete residencies and fellowships, the number of specialists will significantly increase. Assuming that five percent of the work force annually will take advantage of these opportunities, by the year 2010 there will be 29,114 specialists who will comprise 13.1 percent of the work force. The size of this group is sufficiently large to have an impact on health care delivery. However, it is difficult to predict what percentage of these individuals will choose faculty positions.

Second, the rate of growth of the specialist cohort is also influenced by the current slow growth rate of residency programs as previously described. Since specialty residencies account for only a limited percentage of total residencies, specialty residency positions will be limited by overall residency growth rates. Similarly, if the belief that fellowship training should be preceded by a year of residency training is universally adopted, the slow rate of residency growth will hinder the growth of fellowship programs, resulting in a continuing shortage of formally trained clinical researchers available for academic positions.

Third, the pharmacy work force is not capable of supporting training of a large number of specialists and subspecialists during the next two decades, that is, if uncontrolled proliferation of pharmacy subspecialties is allowed, a further dilution of the impact of pharmacy specialists on health care may occur, since individual "specialty pools" will become even smaller. (25)

Students need to be encouraged to consider postgraduate training in specialty areas and to be exposed to specialty practices, but not to the detriment of generalist level education. No college/school can effectively provide experiences covering the full range of differentiated practice environments and specialty practices that exist today. Rather, it is depth rather than breadth in the number of specialties offered that would lead to positive educational outcomes (26). It is essential that students have an adequate understanding of the depth and breadth of pharmacy practice opportunities prior to entering a specialization track, so that they will be able to fully integrate their skills into the mainstream of pharmacy practice. These specialists will then be effective faculty role models, advisors and mentors for their students.

### Faculty Development and Retention

Faculty development has been defined as a process of "... enhancing the talents and expanding the interests, improving the competence, and otherwise facilitating the professional and personal growth of faculty members ... "(27). An underlying assumption is that institutional support of faculty development programs will augment the satisfaction of pharmacy practice faculty members with their academic positions and thereby promote faculty retention. Inherent in this assumption is the assertion that pharmacy practice faculty are often "pushed" from academic life secondary to frustration and stagnation as opposed to being "pulled" away by competing interests, for example, the pharmaceutical industry.

**Characteristics of an Effective Faculty Development Program.** An effective faculty development program must have the following characteristics. First, faculty commitment—a successful faculty development program requires the en-

**Table I. Faculty development methods<sup>a</sup>**

1. Research Development Methods
  - a. Self-learning
  - b. Workshops, (e.g., grantsmanship, laboratory methodology)
  - c. Didactic courses
  - d. Visiting professorships
  - e. Sabbaticals
  - f. Scientific conference participation
  - g. Collaborative research
  - h. Retraining/career redirection (senior faculty)
  - i. Mentorship programs
2. Teaching Development
  - a. Education courses
  - b. Peer evaluation and mentoring
  - c. Student evaluation
3. Professional and Clinical Service Development
  - a. College committees
  - b. University committees
  - c. Professional organization committees
  - d. Clinical site visits
4. Other
  - a. Time management training
  - b. Administrative courses

<sup>a</sup> See references 32 and 33.

dorsement and cooperation of the individual faculty person. In other words, faculty development is a joint venture between the individual and the institution. Second, flexibility—junior and senior faculty often have different developmental needs, and productive faculty may have fewer needs than less productive faculty(28). In either instance, however, some degree of structure is desirable within faculty development programs to achieve well-defined goals and objectives. Third, institutional resource commitment—administrators must provide time and monetary resources in order for faculty to fulfill their developmental plans(29). This includes fostering a supportive environment within the organization to facilitate faculty growth, and providing essential resources, such as faculty depth, laboratory space, research funds, travel, and support personnel.

**Faculty Development as an Institutional Priority.** Faculty are an institutional investment that need to be nurtured and protected(30). Faculty development programs can help to achieve this goal by promoting faculty retention. Retention is particularly important during a period of growing shortages of qualified pharmacy practice faculty. Faculty development can be used to help individuals establish goals that are consistent with the goals of the college/university(31). Examples include enhancement of research productivity, and improvement of teaching methods and course content, such as incorporation of biotechnology, computer-assisted instruction, and techniques that foster critical thinking(28). Increased service to other faculty members, patients, and the profession is another potential consequence of faculty development. Specific faculty development methods and activities are listed in Table I.

**Evaluation and Feedback Procedures.** It is critical that faculty development programs establish well defined goals and objectives consistent with administrative expectations and the needs of the practitioner/educator or researcher/

educator faculty models(8,9). Periodic administrative review of individual faculty development activities and accomplishments should occur at least yearly.

### Resource Allocation

Considering the shortage of pharmacy practice faculty and the diverse needs of the academy in identifying, training, recruiting, developing and retaining our future peers, the allocation of financial and human resources in pharmacy practice departments must be planned with more than maintaining the status quo in mind. Each department, within the context of the overall mission of the school or college, should determine its mission as it relates to advancing pharmacy practice through professional education programs, such as PharmD and post-PharmD residency and fellowship programs, and curricular-based continuing education programs, such as nontraditional PharmD program pathway and certificate programs. The mission statement should also address advancing pharmacy practice through organized research programs, and faculty development through growth in teaching effectiveness, research productivity and maintenance of clinical practice expertise.

The overall outcome goals for each type of program offering must also be determined, as well as the outcome goals for each core and elective experiential training component of those programs, and the responsibilities and approximate time commitment required for a given pharmacy practice faculty person in each core and elective rotation. Subsequently, a process of resource allocation similar to the model described below should be utilized.

First, the categories of clinical personnel and numbers of personnel in each category that reflect the school's basic model of staffing should be determined. These include tenure track researcher/educator, nontenure track practitioner/educator, postdoctoral clinical and specialty residents, postdoctoral research fellow, and adjunct pharmacy practice faculty positions. The numbers of personnel in each category will be a composite determination derived from the following factors: (i) the mission of the school/department and the strategic roles of each personnel category needed to pursue that mission, for example, teaching and clinical training, research and research training, and service to advance practice, and (ii) the relative costs of each personnel category and the strategies needed to optimize teaching productivity for the dollars invested, as well as achievement of other goals related to the department mission. An important consideration in this determination is the calculation of the number of clerkship rotations per year which an FTE of each category of personnel will be expected to normally supervise.

Second, position descriptions should be developed for each of the above categories of personnel. The faculty descriptions should outline role components and outcome measures that will be used to assess the faculty member's effectiveness in carrying out his/her professional responsibilities.

Third, the intended contribution of postgraduate curricular-based continuing education (CE) for practitioner development must be determined as it relates to: (i) advancing pharmacy practice in the region served by the school/college; (ii) increasing the number of clinically trained practitioners who can and desire to participate as affiliate and/or adjunct pharmacy practice faculty; and (iii) generating cost-recovery tuition revenues from CE program participants.

Fourth, the costs to the school for the clinical teaching, clinical training, and administrative coordination of the education/training program components should be calculated. This should include the funding that will be provided to the practice sites affiliate and/or adjunct pharmacy practice faculty, and the cost of personnel needed for quality assurance of the specific training programs, given the staffing plan described.

This process of analysis also needs to address, if applicable, the plan for faculty development by which nontenure track practitioner/educators can move to the tenure track, or tenure track practitioner/educators can evolve to become researcher/educators or remain as senior level leaders in the practitioner/educator category. The resource allocation implications of these options, assuming that the different personnel categories have different student training capacities, must also be considered.

### RECOMMENDATIONS

Recognizing that change is needed in our present system of faculty resource development and renewal, a number of general assumptions provided the broad framework for the Task Force recommendations. These assumptions were: new reward and recognition systems that accept a broadened definition of scholarship must be developed; change must be scholarly, whether that involves creating new teaching methods, developing curriculum, or training faculty; students must be educated to enable them to develop the abilities and perspectives needed for a lifetime of career development; students must view academic pharmacy practice as an attractive career pathway that presents opportunities for productive and rewarding growth and societal contributions; faculty exchanges and resource sharing should be considered to enable us to achieve our corporate goals; and, pharmacy practice departments must develop effective, realistic mission statements and adhere to them in order to fully and efficiently utilize limited resources. Specific recommendations of the Task Force are listed below:

#### Planning Strategies

1. Colleges/schools of pharmacy and pharmacy practice departments/divisions should adopt clearly articulated mission statements that state their purposes for teaching, research and service, as well as for faculty development. Faculty and student needs should be assessed thereafter to actuate these statements.
2. The AACP Section of Teachers of Pharmacy Practice can facilitate the efforts of departments/divisions of pharmacy practice by developing a model mission statement that encompasses purposes of research and scholarly activities, undergraduate and postgraduate education, service, research training opportunities for practitioners, and the rationale for resource allocation, faculty recruitment and retention.
3. Schools/colleges of pharmacy should base their budget and staffing plans for clinical education and training programs on an assessment of (i) the school's model of staffing, clinical practice training, and clinical research training, (ii) the number of clerkship rotations and FTE of each type of personnel to instruct and coordinate educational programs in affiliate practice sites, and (iii) the projected financial contribution of postgraduate continuing education provided by the school for practitioner development.

## Educational Strategies

1. Individual faculty must assume responsibility for serving as role models for attracting students to pursue careers in academic pharmacy practice. Colleges and schools of pharmacy with significant research programs should provide resources for a research/ education track for pharmacy students. The Section of Teachers of Pharmacy Practice should develop a model for such a research/education track.
2. The research mission of pharmacy practice departments should include: (i) orientation of professional degree students to the importance of research in the advancement of pharmacy practice, and (ii) advanced level training of postdoctoral graduates in the skills and habits of research.
3. Schools/colleges of pharmacy should help secure the resources needed for offering research opportunities in pharmacy practice for professional degree students with aptitude and interest.
4. Schools/colleges of pharmacy should work with professional associations and progressive practice settings to support pharmacy practice residencies as a key strategy for developing practice leadership and skills.
5. Schools/colleges of pharmacy should give developmental assistance to community pharmacists for establishing pharmaceutical care models of pharmacy practice residencies in community settings. This should include assessing the pharmacy's patient care program, defining practice management outcomes, and demonstrating the key role of residencies in staff development and PharmD student clerkship training.
6. Each school/college of pharmacy should strive to provide *at least* one advanced level residency and fellowship program in an area of strength. Schools/colleges of pharmacy should seek to provide dedicated, recurring funding for postdoctoral fellowship positions.
7. AACP must take an active role to foster significant growth in the number of postgraduate residencies and fellowships to ensure an adequate supply of well trained future faculty members. A plan to accomplish this goal should be developed through a joint effort of the Section of Teachers of Pharmacy Practice, the Research and Graduate Affairs Committee, and the Director, Graduate Education, Research & Scholarship. A priority for this plan should be the identification of funding sources for fellowship training similar to the support currently provided by the American Foundation for Pharmaceutical Education for graduate programs.

## Faculty Recruitment, Development and Retention Strategies

1. Pharmacy practice departments should utilize the recruitment guidelines outlined in the AACP Academic Management System report entitled, "Recruitment and Retention of Faculty."
2. Colleges and schools of pharmacy should place an extremely high priority on faculty retention. Implementation of faculty development programs is an important method for enhancing pharmacy practice faculty career satisfaction. Pharmacy practice departments should make faculty development a priority within their strategic plans and establish individualized plans that best relate to each faculty member's job description, length of time in rank, and specific needs and interests.

3. Faculty resource sharing between schools/colleges of pharmacy should be attempted to fully utilize the talents of experienced pharmacy practice faculty, including: (i) offering opportunities for sabbaticals or mini-sabbaticals; (ii) mentoring; (iii) cooperative agreements for teaching sections of courses; (iv) co-funding of fellowship training programs, and (v) conducting collaborative research projects.

*Am. J. Pharm.* **58**, 228-235(1994); received 12/15/93.

## References

- (1) Benet, L.Z., "It is the best of times (It is the worst of times)," *Am. J. Pharm. Educ.*, **57**, 291-292(1993).
- (2) Holder, C., "Special Article: Careers in science - Career trends for the '90s" *Science*, **252**,1110-1111,1116-1117(1991).
- (3) Hepler, CD, and Strand, L.M., "Opportunities and responsibilities in pharmaceutical care," *Am. J. Pharm. Educ.*, **53**, 7S-14S(1989).
- (4) Commission to Implement Change in Pharmaceutical Education, Background Paper I: What is the Mission of Pharmaceutical Education? American Association of Colleges of Pharmacy. Alexandria VA (1990); see also *Am. J. Pharm. Educ.*, **57**, 374-376(1993).
- (5) Commission to Implement Change in Pharmaceutical Education, Background Paper II: Entry-Level, Curricular Outcomes, Curricular Content and Educational Process. American Association of Colleges of Pharmacy. Alexandria VA (1991); see also *Am. J. Pharm. Educ.*, **57**, 377-385(1993).
- (6) Commission to Implement Change in Pharmaceutical Education, Entry-Level Education in Pharmacy: A Commitment to Change. American Association of Colleges of Pharmacy. Alexandria VA (1991); see also, *Am. J. Pharm. Educ.*, **57**,366-374(1993).
- (7) Commission to Implement Change in Pharmaceutical Education, Paper IV: The Responsibility of Pharmaceutical Education for Scholarship, Graduate Education, Fellowships, and Postgraduate Education and Training. American Association of Colleges of Pharmacy, Alexandria VA (1993);see also *Am. J. Pharm. Educ.*, **57**,386-399(1993).
- (8) Nahata, M.C., Alexander, D.P., Angaran, D.M., Bradberry, J.C., Bussey, H.I., and Evans. W.E., "Faculty Models in Pharmacy Practice," *Am. J. Pharm. Educ.*, **53**, 392-394(1989).
- (9) Carter, B.L., "Chair report of the AACP Section of Teachers of Pharmacy Practice Task Force on Faculty Models," *ibid.*, **56**, 195-201(1992).
- (10) Anonymous. "JCPP Provisional Draft Mission Statement for Pharmacy Practice." (1991).
- (11) Smith, R.V., Cohen,J.L., Kenyon, G.L., Powell, J.R., Rutledge, CO, and Svarstad, B.L., "Report of the Committee on Research and Graduate Affairs: Education and development of clinical scientists in pharmacy," *Am. J. Pharm. Educ.*, **48**, 430-432(1984).
- (12) Blouin, R.A., Cloyd, J.C. Ludden, T.M., and Kroboth, P.D., "ACCP White Paper: Central issues relevant to clinical pharmaceutical scientist training programs," *Pharmacotherapy*, **11**, 257-263(1989).
- (13) Kay, D.H., Beardsley, R.S., Dickson, W.M., and Roberts, K.B., "Graying of Pharmacy Faculty Committee Report," *Am. J. Pharm. Educ.*, **54**,421-425(1990).
- (14) Kinnard Jr, W.J., Miya, T.S., Weaver, L.D., White, A.I., and Wolf, "Faculty scholarship and research: Their importance to the future of pharmacy education," The 1980 AACP Argus Commission Report, *ibid.*, **44**, 393-404(1980).
- (15) Kabat, H.F., Hunter, T., Kroboth, P.D., Stennett, D.J., and White, S.J., "Report of the Council of Faculties Academic Affairs Faculty Development Committee," *ibid.*, **53**, 423-429(1989).
- (16) Isom, G.E., "Chair Report for the Committee on Research and Graduate Affairs," *ibid.*, **53**,420-423(1989).
- (17) Maine, L.L., "Recruitment and Retention of Faculty: A Faculty Member's Point of View," AACP Academic Management System, American Association of Colleges of Pharmacy, Alexandria VA.
- (18) Miller, W.A., "Some favorite myths concerning entry-level PharmD education," *Am. J. Pharm. Educ.*, **53**, 446-8(1989).
- (19) ASHP Accreditation Standard for Residency in Pharmacy Practice (with an Emphasis on Pharmaceutical Care), *Am.J. Hosp. Pharm.*,**49**, 146-153(1992).
- (20) ASHP Accreditation Services Division 1992 Annual Report. American Society of Hospital Pharmacists, Bethesda MD (1992).
- (21) ACCP 1993 Directory of Residencies and Fellowships. American College of Clinical Pharmacy, Kansas City MO (1993).

- (22) Meyer, S.M., "The pharmacy student population: Applications received 1990-91, degrees conferred 1990-91. Fall 1991 enrollments." *Am. J. Pharm. Educ.*, **56**, 64S-73S(1992).
- (23) Rodman, J.H., "Developing a specialty structure for the pharmacy profession," *Am. J. Hosp. Pharm.*, **48**, 706-712(1991).
- (24) Carter, B.L., "A structure for pharmacy specialization." *Ann. Pharmacother.*, **24**, 1113-1114(1990).
- (25) Knapp, K.K. and Sorby, D.L., "The impact of specialization on pharmacy manpower," *Am. J. Hosp. Pharm.*, **48**, 691-700(1991).
- (26) Lipman, A.G., "Specialization in pharmacy education: Resources and risks," *Am. J. Pharm. Educ.*, **54**, 381-382(1-1990).
- (27) Gaff, J., *Toward Faculty Renewal. Advances in Faculty Instructional and Educational Development*, Jossey-Bass Publications, San Francisco CA (1975).
- (28) Rutledge, CO. and Trinca, C.E., "Faculty Development," AACP Academic Management System, American Association of Colleges of Pharmacy, Alexandria VA.
- (29) Knapp, D.A., "An educator's view of the time, talent and treasure required for meaningful development," *Am. J. Pharm. Educ.*, **48**, 367-369(1984).
- (30) Manasse, H.R., "Seventy-three futures: Some thoughts and comments on faculty development," *ibid.*, **50**, 357(1986).
- (31) Doluisio, J.T., "Improving faculty effectiveness." *ibid.*, **47**, 361-363(1983).
- (32) Talbert, R.L. and Garnett, W.R., "Planning Commission Report on faculty development," *ibid.*, **50**, 195-196(1986).
- (33) Penney, S.H., "Faculty development in the SUNY system." *ibid.*, **48**, 369-371(1984).
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