

## The Need for a Broadened Definition of Faculty Scholarship and Creativity

Nicholas G. Popovich<sup>1</sup> and Steven R. Abel

*School of Pharmacy and Pharmacal Sciences, Purdue University, Robert Heine Pharmacy Building, West Lafayette, IN 47907-1335*

The intent of this manuscript is to demonstrate the continued need for an expanded view of the various forms of scholarship (*i.e.*, application, integration, teaching) among faculty and administrators within the academy beyond the traditional form (*i.e.*, discovery) of scholarship. The Commission to Implement Change in Pharmaceutical Education espoused this several years ago and to date the issue remains unresolved. This manuscript defines the various forms of scholarship espoused by the late Ernest Boyer and embraced by the Commission, and provides a historical perspective of postsecondary education and how it has influenced current thinking associated with promotion and tenure decisions. It also provides recommendations to promote a cultural change among faculties and administrators to recognize other forms of scholarship beyond discovery, and how to enhance and facilitate the promotion and tenure process for newly appointed, junior faculty.

### INTRODUCTION

Research, education, and service, the three-legged stool, traditionally, defines the activities of university faculty. Today, these have been recast as discovery, learning, and engagement. Regardless of terminology, however, in professional schools, *e.g.*, pharmacy, medicine, there is a fourth leg, that being clinical service. This fourth leg places inordinate pressure upon clinically educated and trained individuals when they are appointed to faculty within tenure tracks. Thus, a solution has been to appoint these individuals into nontenure, clinical tracks and recognize the positive contribution that they provide in terms of clinical teaching and service (*e.g.*, patient care, in-service presentations, drug information and evaluation), and in most instances, the limitations this places on their ability/opportunity to conduct scholarship/creativity.

The emergence and acceptance of the clinical track faculty has changed the composition of professional schools in that these individuals now contribute integrally to the education and training of the pharmacy student. Indeed, they are full partners in the education of the student, and contribute substantially to satisfying the guidelines for accreditation established by the American Council on Pharmaceutical Education. However, there is a view among some tenure-track faculty that these clinical track faculty are not scholarly enough in the traditional view. Consistent with this, too, among some faculty is a narrow view of what scholarship is and how it should be rewarded. Another contentious issue is that the use of clinical track faculty has been accompanied by a proportional decrease in tenured faculty(1). This dilemma has emerged in the academic medical literature and is consistent with that experienced in pharmaceutical education.

It is not uncommon for clinical faculty to be hired into tenure track positions as well. This is necessary because some universities do not recognize nontenure, clinical tracks as

options for its faculty appointments. Some faculty at these universities believe that hiring nontenure types dilutes the scholarly nature of the academy. Further, these faculty are concerned that if a school has an inordinately high number of nontenure track faculty, these faculty could have influence on faculty matters, most notably the professional curriculum. Again, while this has been reported in the academic medical literature, one could extrapolate this to pharmaceutical education as well(2).

Suffice to say, whether in a tenure track or a nontenure track, one must be scholarly and creative. Indeed, the AACP Commission to Implement Change in Pharmaceutical Education made this quite clear in its last position paper(3). It also indicated that there must be a re-focus of what constitutes scholarship from the current, traditional, narrow view of it to a broader view espoused by the late Ernest Boyer(4). The Commission wrote, "as they assess faculty competence, pharmacy schools and their faculties must individually recognize and place a value on the various ways of advancing and disseminating knowledge"(3).

To understand how this thinking and view of which type of scholarship (*i.e.*, discovery) is to be rewarded has taken over within universities and understand the current context of scholarship, it is necessary to review the development and growth of American universities and colleges through the years since colonial times.

### HISTORICAL BACKGROUND

The focus of the academy has evolved throughout the history

<sup>1</sup>*Corresponding author address:* Department of Pharmacy Administration, University of Illinois at Chicago, College of Pharmacy (M/C 871), 833 South Wood Street, Chicago, IL 60612-7230

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of the United States resulting in the current emphasis on research. Dr. Boyer traced how the focus of the academy has evolved since colonial times(5). The first American universities and colleges founded in that period were largely concerned with teaching and focused on educating their students for future civic and religious leadership. Student learning was the goal of the university. This emphasis changed in the 19th century as the U.S. developed from a collection of weak individual states to a strong nation. Then, the emphasis needed a change in focus toward technical training and education. This importance was further emphasized by the Morrill Act, 1862, which donated federal land to each state for support of education in both liberal arts and practical training for the emerging agricultural and industrial revolutions that the country was experiencing. At this point in time, the focus of the university also included service. To this day, examples of this continues with the extension services provided by many institutions of higher learning.

Boyer indicated that the transition from a learning to a service focus continued into the 20th century as universities and colleges continued to educate students to serve society and help reshape it(5). He pointed out that at this time, many scholars, who were educated in Europe were greatly influenced by the research orientation of the German universities. Consequently, in the more prestigious universities, basic research gained greater importance along with graduate education and these became the model of the modern university. At the beginning of the 20th century, however, research and graduate education were the exception rather than the rule in most universities. The focus remained student-centered toward learning, and the land-grant university continued to take pride in its educational orientation towards service.

In the 1930s to the 1940s which featured the Depression and World War II, Boyer chronicled a dramatic change that emerged in academic life(5). This was due in part to the push for scientific collaboration during the war effort in various projects, most notably the atomic bomb. The role of the federal government in the funding and development of collaborative projects in the scientific community during the war and early post-war years eventually led to the founding of the Office of Scientific Research and Development in the federal government. From that time, academicians increasingly looked towards their government as a source of funding to support a growing research enterprise. Starting in the late 50's and into the 60's, the focus on scientific research and training at universities increased dramatically. This was especially so as a consequence of the early successes of the Soviet Union in the race towards space exploration.

As the emphasis on research and graduate training in American Universities continued, scholars began to identify their research and teaching with their disciplines rather than with the academy as a whole. Indeed, the definition of a "scholar" now became synonymous with the university professor(5). This increasing focus on, and identification with, specific disciplines in the academy continued as increasing emphasis was placed on research, specifically discovery. In orientation exercises, faculty documents, and other venues, faculty leadership often failed in providing junior faculty with a discussion of an expanded view of scholarship (*e.g.*, discovery, integration, application, teaching). Hence, junior faculty wrongly perceived that traditional research (*i.e.*, discovery) was the sole opportunity for scholarly work in a college. Even if educated and trained in the other forms of scholarship, pressure

was felt to perform the scholarship of discovery. Further, the scholarly products related to this research (*e.g.*, NIH funding, peer-reviewed journal articles) afforded tangible, easily quantifiable evidence of one's success, and other forms of scholarship were and continue to be discounted during the promotion process. It reached a point where young faculty members who were hired to educate nonetheless were evaluated for promotion based primarily on their ability to perform research and publish results, and this continues in large part today.

All faculty aspire to be promoted and to earn tenure. Typically, academic medical centers have rewarded faculty on the basis of research and scholarship as defined by traditional academic criteria(6). Today, more young faculty focus on research. Given modest to large startup packages, they feel the necessity to focus upon research and demonstrate competence as a researcher as a condition for promotion to a tenured position. In general, this has resulted in turnover of faculty and where this is acutely apparent are in those departments responsible to teach clinical and experiential components of the professional curriculum. They are hired and over the course of seven years because of heavy teaching loads are unable to achieve the standard for success held by the promotion and tenure (P&T) committee(6).

In the 1980s and early 1990s, higher education was given a challenge as state legislators, parents of college students, and academicians who relished teaching, among others, began to question the emphasis on research in universities and to stress the importance of faculty as educators(7). Thus, accrediting agencies then went to "student assessment" as a component of evaluating the outcome of the university. This threat was taken seriously by some and there was a birth of problem-based learning methodologies that involved students in the learning process. The Commission to Implement Change in Pharmaceutical Education in Background Paper II encouraged innovation and creativity within the educational process(8). However, with a strong 90's economy, the fervor for determining a University's student outcome waned, and accrediting agencies still have yet to hold the universities accountable for the assessment of student learning outcomes(7). In reality, there are some faculty who view assessment as an externally imposed requirement having little or no meaning with its business of research and teaching(7). However, this challenge for accountability manifested itself in promoting within tenure decisions an evaluation of the quality of one's teaching in addition to a higher demand for faculty scholarship. Thus, the bar for tenure and promotion is increasingly "being raised"(7,9).

Suffice it to say, however, scholarship must be viewed from an expanded perspective as espoused by the Commission for the academy to survive(3). Otherwise, the narrow view of scholarship within the realm of discovery will extinguish any hope that talented, bright young graduates will aspire to become faculty and be hired to achieve the educational and engagement mission of the University. The various forms of scholarship proposed by Boyer follow(4).

#### PRINCIPLES: DEFINITION OF SCHOLARSHIP

Hansen and Roberts argue that scholarship is demonstrated when knowledge is created, advanced, or transformed by application of one's intellect in an informed, disciplined, and creative manner(10). The products that result from this effort are assessed for quality by peer review and made public. The defining elements of scholarship should include innovation, originality, creativity, and peer recognition, including dissemination,

acceptance, and impact. The Commission embraced this(3) and it is important to review these defining elements now with examples of Boyer's extended definition of scholarship that are pertinent to pharmacy faculty.

#### EXPANDED DEFINITIONS OF SCHOLARSHIP

The Scholarship of Discovery occurs when faculty create new knowledge. This type of scholarship is most consistent and traditional with "basic scientific research." Indeed, it is the traditional view of scholarship within American universities and colleges. Those engaged in this form of scholarship answer the questions, "what needs to be discovered?" "what remains to be found?"(4). In schools/colleges of pharmacy, this includes traditional bench research and clinical research.

The Scholarship of Integration occurs when a faculty member's effort brings together disparate concepts and principles and synthesizes them into a new perspective. Disciplines become linked when connections are made via known facts. One places one's knowledge into a larger context and explains another's data in a unique way(4). This type of scholarship is linked closely to discovery in that new information. In 1956, William Shockley was awarded a Nobel Prize for his work on semiconductors. Subsequently, this research led to transistors, which in led to the development of integrated circuits that carry an electronic signal. Another example is that of the 1964 Nobel Prize winner Charles Townes' work. His research in quantum electronics led to the invention of lasers, which read the pits in the compact disc and bring alive the beauty of many performing artists.

The faculty involved in this type of endeavor ask questions such as, "what do these findings mean in my profession?" and "How can this information be melded into a new way of thinking?"(4) Within schools/colleges of pharmacy, studies within pharmacy administration (*e.g.*, delivery and health outcomes research) emerge as a clear example of this form of scholarship.

Unfortunately, the isolation of the disciplines from one another is a deterrent for this form of scholarship. Historically, small to medium-sized institutions have prospered with the scholarship of integration earlier than larger-sized institutions. In that environment, it is much easier to encounter faculty from other disciplines. However, interdisciplinary research has become a significant part of larger universities' strategic plans and is beginning to prosper in that environment as well. Departments such as biomedical engineering, electrical and computer engineering, and medicinal chemistry and molecular pharmacology, among others, demonstrate the scholarship of integration. The Commission noted too, that "while it is important that faculties demand independence of their scholars, it is just as important that this independence not be confused with simply demanding single authorship or first authorship of papers. While sole or first authorship is one indicator of independence, faculties must seek other evidence of independent scholarship as collaborative efforts become increasingly common."(3)

The Scholarship of Application occurs when previously discovered information is applied to solve problems and new insights and understanding results. The scholarship of application begs the question, "how can knowledge be responsibly applied to consequential problems? How can this knowledge be useful to individuals as well as institutions?"(4) To be considered scholarship, service activities must be tied directly to one's special field of knowledge and relate to, and flow directly

out of, this professional activity(4). If, for example, the clinician systematically assesses the effectiveness of different therapeutic approaches to ameliorate a disease process or develops an innovative pharmaceutical care plan/strategy based on a specific patient type and communicates these findings in a way that allows others to benefit from this, that is scholarship. The analysis of public health issues and clinical treatment trials that result in scholarly works are also included within the realm of the scholarship of application. In essence, there is a dynamic between theory and practice and this flows to and from each(4). Contrary to the original form of service which was unidirectional toward the benefit of the recipient, in the new paradigm, theory cannot be divorced from practice because from practice research ideas flow back to theory(4).

A common element to the prior examples is that the clinician is trying to answer a specific question or to test a hypothesis. But, scholarly work can be accomplished without testing a hypothesis. For example, in pharmacy, a clinician might develop a new model to treat Type II diabetes that can become the subject for a scholarly study that can assess, criticize, and eventually modify the model. The clinician then makes a scholarly contribution when he/she effectively describes the rationale and elements of the model and disseminates these in a way that they can be evaluated and critiqued. Further, scholarly reviews of current drug therapeutics are examples of the scholarship of application.

Shapiro and Coleman argue that faculty whose scholarship involves application should have protected time to conduct it(11). They further point out that this type of scholarship may require longer periods of time to complete, particularly for clinical faculty. The central reason is that these faculty must first establish their clinical practice and develop professional relationships. Thus, the tenure timetable to recognize this form of faculty scholarship might out of necessity have to be more flexible to evaluate the faculty member. Or, if the system is inflexible from a time standpoint, "research in progress" might have to be allowed to demonstrate evidence of achievement within the promotion document. The Commission challenged administrators and faculty, "to structure systems so that scholarly activities of clinical faculty are defined, recognized, nurtured, and rewarded"(3).

Something that is oftentimes overlooked is that the scholarship of application benefits the academic institution in that it allows the institution to meet its service obligations. It also provides evidence for financial support by allowing a broad range of constituencies (*e.g.*, citizens, organizations) to understand how the academic institution makes contributions to enhance the quality of their lives.

The Scholarship of Teaching is the process of communicating knowledge in a way that enhances student learning and encourages his/her lifelong learning. While Boyer did not make a clear distinction between excellent teaching and teaching as scholarship, Hutchings and Schulman argue that teaching becomes scholarship when it demonstrates knowledge of the field and current findings about teaching(12). Subsequently, it invites peer review and involves exploration of student learning. For teaching to be considered scholarly, the teaching must be public, open for evaluation, and presented in a form from which others can build. Unfortunately, teaching is not always viewed as being appropriately rewarded, and this commonly held opinion dissuades some faculty from pursuing research interests in the educational process.

Scholarly teaching stimulates active student learning and

develops critical thinking skills in students that bode well for lifelong learning. The creation of new materials (e.g., Web-based learning materials, textbook publication, course work software), methods of teaching, and evaluation/analyses/assessment instruments of the best ways to accomplish teaching goals demonstrate the scholarship of teaching. The creation of new educational methodologies that become widely adopted would be a means to demonstrate scholarship. Abstracts and presentations on teaching innovations and creativity should count as much as presentations at research forums.

It is clear that many within academic pharmacy are engaging in the this kind of scholarship. Indeed, the academic literature in pharmacy is replete with many examples of the scholarship of teaching(13-15). However, oftentimes this scholarship is accomplished without a significant supporting infrastructure and/or resources. Typically, faculty develop educational methodologies and strategies on their own time after fulfilling their normal obligations. This usually culminates in innovative methodologies and strategies never really being disseminated outside of the School/College.

From experience, the authors believe that many faculty would engage in this type of scholarship if they were provided administrative support and encouragement and skill development opportunities. Simply, many faculty are reluctant to pursue the scholarship of teaching because they do not possess an in-depth research knowledge or writing experience in this arena. Further, within the review process for the *American Journal of Pharmaceutical Education*, objective evaluation of the effectiveness of the learning innovation becomes an issue. Peer review, however, should not be viewed merely as quality control(16). It must also aim to introduce into academic pharmacy new and improved ways of teaching and learning and encourage innovation. Thus, an appropriate balance must be struck. A middle ground might be for the *Journal* to initiate an "In Progress" feature of short reports of innovative, but comparatively new teaching/learning methods that have not been entirely evaluated. This concept has already been introduced into Academic Medicine(6).

#### WHAT SHOULD BE THE DEFINITION OF SCHOLARSHIP IN COLLEGES/SCHOOLS OF PHARMACY?

The institutional mission and value statements of all colleges/schools of pharmacy promulgate a commitment to scholarly activities(17). Typically, however, the scholarship of discovery is the traditional form of scholarship pursued at Research I institutions. Further, there is a lack of meaningful discussion of alternative forms of scholarship among the administration and faculty. The result is a large gap in a faculty member's understanding of the scholarship of integration, application, and teaching. There is also a faculty disconnect in realizing the value that these types of scholarship bring to the college/school. Typically, too, the newly appointed, junior faculty member is given little or no direction about scholarship.

This gap in understanding the different forms of scholarship can have consequential impact. Typically, junior faculty members will assume that the only form of scholarship to be pursued is that of discovery (i.e., traditional research). Secondly, there is a perspective by some members of the promotion and tenure committee of other forms of scholarship and the products of that scholarship (e.g., NIH funding, peer-reviewed journal articles). But, there are other forms of scholarship (e.g., case reports, descriptions of new, innovative drug

therapy, CD-ROMs, funding from other sources [e.g., pharmaceutical manufacturers, foundations]) that must be recognized. Consequently, this lack of appreciation dissuades junior faculty members from these alternative scholarly avenues as they have diminished value in the eyes of those who sit on the P&T committee. Oftentimes, it seems ironic that the persons with the most influence within a P&T committee are those who are the furthest removed from appreciating another's research and scholarship(18).

In general, university P&T policies are designed for traditional faculty roles. Clearly, the role of the basic scientists and their recognition are the easiest to incorporate into these policies. However, pharmacy practitioner faculty pursue nontraditional "clinical" activities and these are oftentimes difficult to incorporate into a university's P&T policies. Work expectations between basic science faculty and clinical faculty are very different. Clinical faculty spend an inordinate amount of time engaged in clinical practice of the discipline they instruct. These activities are important because they demonstrate the university's outreach and engagement mission. Consequently, clinical practice consumes/saps a great amount of the clinical faculty member's time and energy. While a portion of the clinical activity contributes to scholarship opportunities, many do not. Much time spent performing clinical activities diminishes one's abilities to engage in scholarship(6).

#### RECOMMENDATIONS

Oftentimes in faculty meetings, retreats, and documents, the faculty and administration fail to engage in specific, meaningful discussions of alternative forms of scholarship(19). Hence, there is a large, existing gap in the faculty's understanding of the scholarship of integration, application, and teaching(19). Thus, the task ahead which reflects the continuing challenge put forth in the Commission papers is to embrace all forms of scholarship and promote a cultural change toward openness and new ideas through discussion and engagement. This exemplifies the openness that promotes the free exchange and critical analysis of ideas that serve as the basis for academic thought and process. Deans and department heads must meaningfully educate their faculties and evaluation committees (i.e., P&T) about guidelines for documenting and evaluating scholarly work and be open-minded in the process(18). Faculty forums/retreats should be conducted to discuss the various forms of scholarship and get faculty to a "common ground" of understanding.

Clearly, there is a need to describe the scholarships of integration, application, and teaching to all faculty members with examples. In particular, those departments (e.g., pharmacy practice, clinical pharmacy) whose effort for the most part centers on these three forms of scholarship should prepare for the P&T committee of the college/school descriptions of its criteria for promotion and tenure and each form of scholarship (see Appendix). This is important as it provides guidance to faculty outside of the department as to how the department assesses the faculty member worthy of being brought up for promotion. With these criteria, the sitting P&T committee members can assess the faculty member. In retrospect, it would seem appropriate for all departments within the college/school to develop such documents. In this way, P&T members from different departments have more to go on in the evaluation process and can be fairer to the candidate. Another useful reference to consider for P&T committee members is the comparison that Glassick *et al.* performed using the six criteria for scholarship

applicable to traditional research (*i.e.*, clear goals, adequate preparation, appropriate methods, significant results, effective presentation, reflective critique) and compared it to teaching.(20)

Each new faculty member should receive a copy of the P&T policies and the descriptions of scholarship/research activity as promulgated from his/her home department. It would seem wise, also, that the respective department head and dean review these with the new faculty members at the beginning of the academic year. Further, ongoing mentoring and faculty development strategies (*e.g.*, educational resource materials, campus faculty programs dedicated to teaching and student learning) should be initiated for the new faculty members that encourage and empower them to pursue whichever form of scholarship they elect. For example, for those desiring the scholarship of teaching, linking that faculty member with other faculty members knowledgeable in educational research and/or writing experience would be invaluable.

Constructive formative and summative feedback should occur on a regular basis (*e.g.*, annually) for all faculty below the rank of full professor. Alternatively, a formal review of the faculty member's progress can occur, for example, at two and four year intervals. Ultimately, then when the promotion decision time has arrived, the faculty member who has performed should have little difficulty with the P&T process.

Faculty candidates for promotion must be provided adequate guidance toward the preparation of promotional materials. Many junior faculty members receive little or no formal guidance in preparing for this process and sometimes must rely on "word-of-mouth" from those who have gone through it. One of the best methods to help young faculty is to identify a faculty mentor who can "coach, guide, and cajole," him/her through the formative, "probationary" years and make a covenant to be there for the junior faculty member(21). The tenure clock begins ticking with the first day on campus, and it is unlikely that any faculty member can be provided a flexible, lengthened, time limit to earn promotion and tenure given their "clinical" faculty responsibilities. This latter approach would create too chaotic a system to oversee and engender ill will from those who would be under the traditional time limitations for tenure and promotion. Thus, a good, caring mentor can overcome this limitation of time by knowing the types of scholarship and contributions that hold the most weight in tenure decisions, and guiding the candidate accordingly. Mentoring becomes especially crucial for women(21) and for minorities who encounter extra pressure in their academic careers.

## SUMMARY AND CONCLUSIONS

Every college/school of pharmacy should expand its definition of scholarship beyond discovery to be inclusive of integration, application, and teaching, if it has not done so already. In that regard, this manuscript has attempted to expand the view of scholarship among faculties of colleges/schools of pharmacy who have been slow to answer the challenge put forth by the Commission(3). There is a clear need to recognize and reward all functions of the faculty, especially the crucial contributions of non-tenure, clinical track faculty, who provide significant one-on-one teaching and clinical service.

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## APPENDIX.

### Department of Pharmacy Practice Promotion Criteria for Tenure Track Faculty

**Preamble:** One important mission of the School of Pharmacy and Pharmaceutical Sciences is to prepare future and/or current practitioners to meet the health care needs of the people of the State of Indiana and society, and deliver pharmaceutical care services. Thus, the Department of Pharmacy Practice faculty focus their effort on outcomes that encourage the growth and advancement of the profession of pharmacy. Consequently, efforts in research, teaching, and service must be considered in the context of the impact they have in this regard. That is, while faculty are to be adjudged, in part, on the basis of the creation of new knowledge and the dissemination of that knowledge, consideration must also be given to the impact the candidate's effort plays upon the profession of pharmacy.

Consistent with the University's promotion criteria, candidates are to have demonstrated accomplishments in the areas of teaching, scholarship (*i.e.*, creative endeavor, research) and/or service. The

Department recognizes the various forms of scholarship. These are the scholarship of discovery, the scholarship of integration, the scholarship of application, and the scholarship of teaching. The first two forms of scholarship reflect the investigative and synthesizing traditions of academic life. The third demonstrates how knowledge can be responsibly applied to consequential problems within the profession, and the fourth recognizes that in the role of scientist/scholar one must not only find new truth, he/she must be capable to teach it to all who desire to learn.

To facilitate continual progress and ultimate success within the promotion process, the Head of the Department will meet annually with the faculty member to establish yearly goals and review past progress/performance. Annual faculty goals will be based on the distribution of the faculty member's effort toward teaching, research, and service, and be originally set forth at the time of the faculty member's appointment to the faculty of Purdue University School of Pharmacy and Pharmaceutical Sciences. With years in rank, this distribution may change somewhat and reflect individual faculty and departmental need.

## SPECIFIC STANDARDS FOR VARIOUS RANKS

### Criteria for Promotion to the Rank of Associate Professor

Promotion to the rank of Associate Professor requires clear and demonstrated evidence that the candidate, by independent effort, has a significant record of accomplishment as a faculty member and demonstrates promise of continued professional and scholarly growth and recognition.

In addition to demonstrating excellence in teaching, candidates for promotion from the rank of Assistant Professor to Associate Professor are expected to have a solid record of performance in the various nonteaching tasks expected of faculty. Promise of future success is evidenced through numerous means within and/or outside of the profession. For example, invited pharmacy and/or allied health professional conference/meeting presentations, participation in symposia, appointment to local and national and/or academic committees are indicative of professional growth and recognition. Further, authorship of textbooks, chapters for textbooks, instructional materials (e.g., on-campus, distance learning), journal articles, etc., that advance the practice of pharmacy is an important avenue to professional recognition.

For some faculty, research accomplishment will be the main focus for his/her promotion. Toward that end, a demonstrated record of scholarly accomplishment, in one of the four aforementioned categories (*i.e.*, Scholarship of discovery, Scholarship of integration, Scholarship of application, Scholarship of teaching) [see Appendix A below], that is recognized at the national level is a necessity. Further, evidence of the dissemination of new knowledge in high quality peer-reviewed journals and documented extramural funding for support of the candidate's research is necessary.

For other faculty, service to the profession may be the main focus for his/her promotion. Toward that end, a demonstrated and recognized record of helping to advance the profession through innovation and contribution is a necessity. To be considered the scholarship of application, service activities with local, state, and national pharmaceutical associations/organizations must be tied directly to advancing the mission of pharmacy practice, and relate to, and flow directly out of, this professional activity. Demonstrated evidence of the impact of that service shall be apparent and disseminated in the professional literature and other work as described in the second previous paragraph. Conferral of a professional service award is another affirmation of the candidate's efforts toward advancing the profession and the value placed on that effort.

The promotion document will be supported by evaluation letters by recognized peers in the discipline, including those from individuals independent of those suggested by the candidate.

### Criteria for Promotion to the Rank of Professor

Successful candidates for promotion to Professor should be recognized

as authorities in their field of specialization/clinical endeavor by external colleagues, national and/or international as may be appropriate.

Candidates for promotion must demonstrate a continuous record of excellence in teaching, scholarly activity, and/or service. Candidates for promotion to Professor will demonstrate expanded levels of recognition that have resulted in promotion to their existing rank. Foremost among these are efforts focused within their academic discipline and through to associated professional/scientific associations. This is accomplished through a variety of means, among others including, significant scholarly and/or research publications in peer-reviewed journals, creation of instructional and research texts, contribution to such texts, while evidencing an expanded depth, breadth, and quality of service and mentoring within the University, School, Department, the profession, and affiliated institutions.

The promotion document will be supported by evaluation letters by recognized peers in the discipline, including those from individuals independent of those suggested by the candidate.

## Criteria for Teaching, Research and Service

### Teaching

The requisites for teaching effectiveness include competence, integrity, independence, enthusiasm, a spirit of scholarly inquiry, a continuous verve for new knowledge in one's content area, an ability to effectively transmit information to learners, to arouse curiosity in students, and to inspire students to do creative work. Evaluation of teaching effectiveness can be manifested in assessment of classroom performance, development of curricular materials, educational development activities, and experiential student evaluation. Teaching effectiveness will be judged upon:

1. the candidate's overall teaching abilities as reflected in student evaluations in a course (*i.e.*, traditional on-campus, clinical setting) in which the candidate was a major contributor or in-charge instructor.
2. the candidate's teaching competence determined by peer evaluation and/or critique from other Departmental faculty of higher rank in team-taught courses.
3. the candidate's contribution to professional education (*e.g.*, pharmaceutical, medical, nursing) as demonstrated by the following, among others:
  - a. developing, implementing, and evaluating new courses or clinical rotations, or revising an existing course.
  - b. securing educational development grants or conducting experimental educational programs.
  - c. publishing in-depth review articles relating to one's content expertise in professional journals.
  - d. authoring or co-authoring chapters in a pharmacy or allied-health related (*e.g.*, medicine, nursing) textbook.
  - e. demonstrating instructional innovation, including the application of technological innovation, evaluating the innovation, and disseminating new knowledge from the innovation in appropriate academic journals.
  - f. developing and participating in continuing education programs, inclusive of distance learning.
  - g. receiving a recognized teaching award.
  - h. invited presentations on teaching concepts/issues at a national level and/or within academia.
  - i. authoring educational software.
  - j. mentoring/training of advanced degree professionals. The candidate demonstrates a record of advanced degree professionals mentored and trained through post-doctoral residency teaching and/or research training programs and/or mentoring graduate students.

It is a given that the candidate's contributions will be scholarly, of high quality, and significant in these areas.

## Research

The purpose of this evaluation is to demonstrate that the candidate is an independent researcher, capable of conducting high quality research. The following criteria, among others, are used for that assessment.

1. Publications. The candidate shall be a primary author of original research published in peer-reviewed journals. Primary authorship is defined as playing a major role in the initiation, development, and execution of the research. Evidence of scholarly activity can be manifested in authorship of peer-reviewed review articles, book chapters, books, monographs, and/or technological learning materials, among others, emanating from one's research.
2. Research funding. The candidate has secured extramural funding (e.g., federal agencies, pharmaceutical industry, foundations, private sources) to support his/her independent, research program.
3. Peer recognition. Demonstrated recognition by peers that indicate significant contributions to the field as important. Examples of such evidence include invited presentations at national scientific/professional meetings, conferral of recognition awards (e.g., AACP New Investigator Program, career development), serving on national review committees, editorial boards, and/or election to prestigious national organizations that recognize excellence within the discipline.
4. Presentation and/or dissemination of original, peer-reviewed research through poster or podium presentations at scientific meetings/conferences.

## Service

Service to the advancement of the profession of pharmacy and contribution to the improvement of societal health is valued at the local, state, national, and international levels. Further, this service evidences innovation, influence, and outcomes. Examples of excellence in service can be manifested through the following, among others:

1. Examples of major, professional development programs which the candidate has initiated, administered, conducted, supervised, and evaluated.
2. Evidence of teaching excellence in terms of how well pharmacists acquire and implement information gained and abilities

developed in their practice environments. Included are innovations and contributions to improved teaching methods in the area of lifelong learning and continuing education.

3. Demonstrated leadership in principal conferences, workshops, certificate programs, and other organized educational activities that benefit pharmacists and the profession.
4. Examples of professional service dedicated to local, state, or national organizations (e.g., committee participation and leadership) with demonstrated outcomes.
5. Description of professional service dedicated to patient care and affiliated institutions consistent with the mission of the School.
6. Contribution of a service innovation that imparts benefit to internal and external constituencies of the School.

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## APPENDIX A. VARIOUS FORMS OF SCHOLARSHIP DEFINED<sup>1</sup>

**Scholarship of Discovery.** The creation of new knowledge, rooted in the conviction that disciplined investigative efforts within the academy are strengthened.

**Scholarship of Integration.** Giving meaning to isolated facts and putting them into perspective. This form of scholarship also means interpretation, fitting one's research, and/or the research of others, into larger intellectual patterns.

**Scholarship of Application.** This form of scholarship begs the questions, "How can knowledge be responsibly applied to consequential problems? How can this knowledge be useful to individuals as well as institutions?" To be considered scholarship, service activities must be tied directly to one's special field of knowledge and relate to, and flow directly out of, this professional activity.

**Scholarship of Teaching.** Pedagogical creativity, innovation, and research that culminates in student learning.

<sup>1</sup>Boyer, E.L., *Scholarship Reconsidered. Priorities of the Professoriate*, The Carnegie Foundation for the Advancement of Teaching, Princeton NJ (1990).