

SPECIAL ARTICLES

Barriers to Scholarship in Dentistry, Medicine, Nursing, and Pharmacy Practice Faculty

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There has been an increased emphasis on scholarly activities by health sciences faculty members given the importance of the promotion of public health over the last 50 years. Consequently, faculty members are required to place greater emphasis on scholarly activities while maintaining their teaching and service responsibilities. This increasing requirement of scholarly activities has placed great demands on clinical practice faculty members and it has made their management of clinical practice, teaching responsibilities, and expectations for promotion and tenure a difficult task. This retrospective literature review identifies barriers to the scholarship activities of clinical faculty members in dentistry, medicine, nursing, and pharmacy and discusses strategies for enabling faculty members to pursue scholarly activities in the current health science academic environment. The review indicates commonalities of barriers across these 4 disciplines and suggests strategies that could be implemented by all of these disciplines to enable clinical practice faculty members to pursue scholarly activities.

Keywords: scholarship, promotion, practice faculty, medicine, dentistry, pharmacy, nursing

INTRODUCTION

Over the last 50 years, there has been an increased emphasis from university administrators, faculty members, governmental agencies and legislatures, and the public on the pursuit of scholarly activities by faculty members in our health sciences schools and colleges, given the impact of their research on public health and wellness. Consequently, this has required faculty members in dentistry, medicine, nursing, pharmacy, and the other health sciences to devote more time to the pursuit of scholarly activities, specifically research that can form the foundation for caring for and/or improve the care of patients, while at the same time being responsible for teaching and service obligations to their institutions. This increasing prominence of research in the health sciences has placed greater demands on clinical practice faculty

members. These faculty members have been expected to also focus more of their time on clinical practice, specifically to care for more patients in a dynamic health care environment, as institutions use clinical revenue streams to offset support from other sources.

Objectives

This retrospective literature review serves as a background for understanding current issues related to the ability of clinical practice faculty members to develop their scholarly activities throughout their professional practice. The historical perspectives for scholarly pursuits in higher education and the health sciences environment in the 21st century have been explored, followed by information on the barriers that are encountered and the solutions that institutions can implement/adopt to enable their clinical faculty members to further enhance their scholarly pursuits. The specific objectives of this review paper are to (1) identify barriers to the scholarship activities of clinical faculty members in colleges or schools of dentistry, medicine, nursing, and pharmacy; (2) identify commonalities in the barriers to scholarship across these

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various health care sciences; and (3) discuss possible solutions that would enable clinical faculty members to pursue scholarly activities in the context of the current academic environment in health science education and practice.

Historical Perspectives on Scholarship

Scholarship in the form of the discovery of new knowledge began in American universities as recently as the late 19th century, when pioneer research universities directed academics to not only teach but contribute to the quest for new knowledge. While describing the early stage of development of higher education in the United States, Ernest L. Boyer wrote, "The colonial college . . . took a view of collegiate life that focused on the student – on building character and preparing new generations for civic and religious leadership."^{1(p3)} That approach and attitude has changed significantly over the past 2 centuries. The professional terminal-level health sciences curricula in today's American institutions are offered by comprehensive colleges or universities or research-oriented doctorate-granting universities. As such, scholarship, specifically the scholarship of discovery, has become an integral part of the institutional mission and academic programs, and a necessary requirement for the professional advancement of individual faculty members. In the 20th century, academic research and development was the joint effort of the institutions and researchers. According to Kohler, academics are not professional researchers but rather teachers who fit research into their careers.²

The pre-1990s definition of scholarship was based on the creation of new knowledge which almost exclusively involved bench or clinical research. Since that time, other forms of scholarship have been proposed as key elements in academia. Specifically, there has been a strong impetus to develop scholarship in a range of creative activities in disciplines/subjects once considered to be "non-discovery areas."¹ Scholarship of integration is closely related to the discovery model; however, it may also involve the recognition of connections across disciplines. This type of research may bring a number of seemingly unrelated research results into a cohesive and broader perspective. Scholarship of application is perhaps the most important arena in which today's clinical faculty members are involved as this research relates to clinical trials and other professional service-related activities.

Boyer also included teaching-related activities within the definition of scholarship as ". . . teaching both educates and entices future scholars."^{1(p25)} Along with the arenas of innovative application and integration of knowledge, the research interests and responsibilities of

health sciences faculty members have also diversified. Accrediting agencies have begun to emphasize the importance of demonstrating the achievement of learning outcomes. With this emphasis comes the need for pedagogical research into ways to demonstrate the achievement of learning outcomes necessary for professional practice.

There are key elements that must form the foundation for these proposed types of scholarship. Glassick et al emphasized that all forms of scholarship need to be governed by a number of qualitative standards: clear goals, adequate preparation, appropriate methods, significant results, effective communication, and reflective critique.³ For instance, educational scholarship is defined by the Faculty of the Association of American Medical Colleges as, ". . .any material, product or resource originally developed to fulfill a specific educational purpose that has been successfully peer-reviewed and is subsequently made public through appropriate dissemination for use by others."⁴ However, Fincher et al used Glassick et al's criteria to compare scholarship of discovery and teaching and proposed that "making results/process available to colleagues" satisfies the requirement of "effective presentation."^{3,5,6} On the other hand, recent articles including the special article written by Kennedy et al, as well as Glanville and Houde in nursing literature, argue that good teaching alone does not always qualify as scholarship of teaching unless the outcomes of a teaching approach are subjected to external peer review and effectively communicated.^{7,8} Lee Shulman, the President of the Carnegie Foundation for the Advancement of Teaching, stated that "for an activity to be designated as scholarship, it should manifest at least three key characteristics: It should be public, susceptible to critical review and evaluation, and accessible for exchange and use by other members of one's scholarly community. . .scholarship properly communicated and critiqued serves as the building blocks for knowledge growth in a field."⁹ Most scholars agree that peer review of scholarship is essential regardless of the nature and origin of the work.

Health Sciences and Academic Environment

The health sciences academic environment in the 21st century is quite different from the health sciences practice of the previous century. While the past century was mainly focused on scientific inventions by themselves and less on their application, the current trend is to focus on the utilization or application of inventions and their socioeconomic impact. Health care academia is distinctly different from pure sciences as faculty members need to satisfy multiple roles. The clinical practitioner, in particular, must fulfill the role of providing patient care

and service to the community while at the same time satisfying the responsibilities of teaching, research/scholarship, and service within the university setting. For clinical faculty members, especially those with dual roles of practice and teaching, managing the standard responsibilities in a teaching institution with all the expectations of promotion, tenure, and career development, along with their ever-increasing clinical responsibilities, has become a difficult task. In the midst of this, the expectations of research and scholarship are often not identified for a number of health care disciplines.

According to data publicly available on the NIH Office of Extramural Research web site, total NIH research funding has steadily increased over the past decade. However, the rate of success of new investigator applications has decreased from 27.1% in 2001 to 16.7% in 2006. Similarly, the rate of success for continued funding of projects has dropped from 52.9% in 2001 to 36.8% in 2006.¹⁰ Hence, although the overall NIH funding dollars have increased, the competition for the money too has increased exponentially. Therefore, new investigators—especially junior faculty members—are facing greater challenges in developing and establishing their research. Consequently, this can impact on their professional advancement in academia and the increased demands for clinical productivity and pressure to generate clinical revenue at their practice sites can confound the ability of health sciences practice faculty members to conduct meaningful scholarly activities.

Pharmacy. A major shift in the profession of pharmacy has been the greater emphasis placed on drug therapeutic management, which was heralded by the advent of the entry-level doctor of pharmacy degree programs nationwide. Aging baby boomers are taking more medications than ever before, and this trend of polypharmacy is likely to continue indefinitely. However, in the last 2 decades, the pharmacist workforce has not increased at any rate close to the increase in the number of prescriptions dispensed in retail as well as hospital pharmacy settings. This has resulted in a classic “supply versus demand” strain being put on the pharmacy profession and as a result, state as well as private institutions have responded with the opening of many new pharmacy schools. Established programs have responded by increasing class sizes. From the faculty perspective, this means increased teaching responsibilities and classes with larger numbers of students, as well as increased demand for developing additional experiential sites and training more preceptors. The additional workload often falls on those faculty members already heavily involved in teaching and clinical practice; thereby making concurrent pursuit of scholarly activities difficult.

In the profession of pharmacy, one of the earliest documents emphasizing the importance of scholarship was a paper/report from the Argus Commission in 1980, which identified research as the single acceptable form of scholarship: “research is the activity that makes pharmacy a science rather than a technical skill.”¹¹ The American Association of Colleges of Pharmacy (AACP) Commission to Implement Change in Pharmaceutical Education, Position Paper 4, states, “All pharmacy school faculty must be committed to the educational mission of the school or college, and all full-time faculty must be committed to scholarship.”¹² In the 2003-04 AACP Research and Graduate Affairs Committee report, Leslie et al analyzed AACP’s position and relevant reports on faculty scholarship and the culture of scholarship.¹³ They indicated that it is the responsibility of the institutions to develop and sustain a culture of scholarship by providing adequate resources and designated time for faculty scholarship. It was also emphasized that the concept of scholarship of application could be applicable to the model of practicing pharmaceutical care; therefore, it is important that the students are educated in the realm of the culture of scholarship and by scholars. The necessity and significance of scholarship is strongly emphasized in the 2007 Standards and Guidelines for the Professional Program in Pharmacy Leading to Doctor of Pharmacy Degree administered by the Accreditation Council for Pharmacy Education (ACPE).¹⁴ Based on stakeholder feedback, scholarship and research was deemed an area of emphasis in the latest revision of this document, which states that faculty members in all specialty areas must have doctoral degrees and appropriate training in research that leads to “evidence of scholarship and publication” (Guideline 25.1). While promoting scholarship and research, the document emphasizes that the Dean “must” have “commitment to the advancement of research and scholarship” (Guidelines 8.1) and scholarship and innovation should be part of the College or School Mission and Goals (Guideline 1.4). It is also imperative that the university administrators have a clear understanding of the financial and other resource needs that are necessary in order to achieve the desired level of scholarship among pharmacy faculty members (Guideline 30.4).

Pharmacy academia is facing an acute shortage of faculty. In a 2005 survey, 76 pharmacy schools reported that 406 positions were vacant or lost, out of which 49.3% were clinical sciences/pharmacy practice positions, 34.0% were pharmaceutical sciences positions, 5.4% were administrative positions, 4.9% were social and administrative sciences positions, and 5.7% were research and non-instructional positions.¹⁵ With fewer graduates opting for academic careers and new schools recruiting

their share of faculty members from the existing faculty workforce, the stress is beginning to reflect on the existing infrastructure. Larger class sizes and fewer faculty members in the colleges are leading to more faculty time involvement in didactic teaching and experiential education, leaving little room for scholarship. Demand for teaching faculty members and retirement of experienced faculty members has led to problems in conducting well-structured mentoring programs for young faculty members, which is essential for success in scholarly activities.¹⁶

Medicine. Research and scholarship activities in academic medical centers have gone through dynamic changes over the last few decades. Levinson and Rubenstein comment that in the early 1960s, clinician educators devoted a large amount of time to research and scholarship as only 3% of the revenue was derived from patient care activities.¹⁷ Today, a major portion of the revenue is generated through patient care-related activities, which leads to about 70%-80% of the physician faculty's time in patient care services.¹⁶ While we know that a striking number of medical innovations originate out of academic medical centers, it is still not clear what the primary role of a clinician should be – as an “educator” evaluated in terms of publications in peer-reviewed journals that in turn leads to individual and institutional reputation, or as a practitioner whose major responsibility lies in the area of patient care and medical student teaching.^{18,19}

Dentistry. Other health care-related fields, such as dentistry and nursing, have increasingly emphasized the importance of research and scholarship for their faculty members. The American Dental Education Association encourages the involvement of faculty members in basic and clinical research as well as in the broad areas of scholarship.²⁰ However, a significant proportion of dental school faculty members is over 50 years old and the retirement of faculty members alone will leave faculty ranks depleted during the next decade, consequently affecting overall research efforts.²¹ In 2002-2003, 43% of dental schools reported 4 or fewer vacant budgeted faculty positions.²²

Nursing. A shortage of faculty members also exists in the nursing profession.²³ Of the 2900 nursing doctoral students who enroll each year, only 440 graduate. Additionally, the average age of a new doctoral graduate in nursing was 45.7 years and 6.5% of the graduates were 55 years or older.²³ These unfavorable demographics have not been beneficial for the development of the scholarly culture in nursing schools. The public perception of the value of research conducted by non-physician health researchers may not be helping matters either. The position paper on nursing research published by the American

Association of Colleges of Nursing emphasizes clinical and outcomes research, with some of the areas being chronic illness, behavioral interventions, and health disparities.²⁴ Yet, when the coverage of the *New York Times* science section was reviewed in 2002 for 17 weeks, only 1 out of the 170 publications profiled was a study conducted by a nurse researcher.²³

SEARCH METHODS

In order to identify barriers to scholarship, we searched education-related literatures and databases. PubMed, Education Resources Information Center (ERIC), and International Pharmaceutical Abstracts (IPA) from 1980 to February 2006 were searched. Additionally, the journal web sites for *Academic Medicine* and the *American Journal of Pharmaceutical Education* were searched for specific key words. Articles discussing faculty scholarship in the areas of dentistry, medicine, nursing, and pharmacy were evaluated. Key terms used in the searches were faculty scholarship, disciplines (medicine, pharmacy, nursing, and dentistry) and year. A total of 67 references were identified from this literature review.

The barriers to scholarship identified in each article were recorded along with the major conclusions of the authors. The investigators subsequently reviewed all the available literature to identify barriers that were found in the individual disciplines. Commonly identified barriers were classified under a number of headings and the citations were categorized according to specific disciplines.

FINDINGS

An overview of the common themes identified from the review is shown in Table 1. One of the barriers common to all 4 professions was the requirement to provide clinical services and to participate in clinical teaching activities to support the institutional mission and goals, which limits the time available for the faculty member to engage in scholarly activities.^{16,25-27} Equally important was the lack of appropriate promotion and or tenure guidelines for faculty members providing clinical services and teaching activities; specifically, in recognizing other forms of scholarship or contributions to the overall university activities, missions, and goals.^{7,28-30}

There also appeared to be difficulties in documenting a faculty member's activities in the context of their position and responsibilities.^{5,31-33} The literature supports the idea that clinicians are not aware of other forms of scholarship as defined by Boyer, such as the scholarship of application or scholarship of teaching, or how to document these activities in the context of their promotion and/or tenure documents.¹ Furthermore, there is a lack of faculty development programs that could assist clinicians

Table 1. Some of the Barriers to Scholarship Identified by Dentistry, Medicine, Nursing, and Pharmacy Practice Faculty

	M	N	D	P
Clinical services requirements and teaching reduce opportunities for scholarship.	X	X	X	X
Promotion and tenure guidelines are not consistent with clinical practice faculty job specifications.	X	X	X	X
Faculty members are unaware of other forms of scholarship as it relates to promotion and tenure.	X	X	X	X
Few role models/mentors for scholarship and clinical activities.	X	X	X	X
Institutional culture does not foster or promote scholarship.	X	X	X	X
Health student debt load or salary is too low leading to a lack of interest in positions requiring scholarly activities.	X	X	X	
Lack of support or funding mechanisms to support scholarship of application or teaching in funding agencies or organizations.	X	X		X
No mechanisms to reward or recognize faculty scholarship of teaching or scholarship of application locally or nationally.	X	X		X
Time frame for tenure and promotion related to development and demonstration of scholarship of application, teaching, etc may be longer than current time frames.	X	X		X
Chairs do not recognize alternative forms of scholarship or do not provide adequate mentoring.	X		X	X
Conflict between University and Professional Schools with respect to tenure and promotion criteria.	X	X		
Lack of interdisciplinary cooperation between clinicians and “basic” scientists, lack of collegiality.	X	X		
Clinicians need assistance or mentoring in writing publications or other mentoring activities related to scholarship.	X	X		
Difficulty in becoming a competent clinician who can keep up with complexity of sciences (Paralyzed Academic Investigator’s Disease Syndrome – PAIDS).	X			
Concern that those involved with scholarship of teaching, scholarship of application will be considered “second class citizens.”	X			
Work of Clinician educator is less amenable to publication or to presenting their scholarship or activities.	X			

M = Medicine; N = Nursing; D = Dentistry; P = Pharmacy

in understanding and documenting these alternative forms of scholarship. The other 2 barriers commonly reported in the literature for all 4 professions were the lack of role models/mentors to assist younger faculty members in their scholarship and clinical activities, and a work climate within the institution that limited a culture of scholarship, with differences in ethnicity and gender being the reasons cited most often.³⁴⁻⁴¹

There were a separate set of barriers that were common to dentistry, medicine, and nursing, but not to pharmacy. One was concern for the level of student debt upon completion of professional education given the relatively lower salary levels for individual’s pursuing scholarly activities in academic settings.^{21,42,43} Also, in medicine, nursing, and pharmacy, the literature suggested local as well as national barriers related to the lack of mechanisms to both reward/recognize and provide funding support for faculty scholarship of teaching and/or application. In addition, there was concern that the timeframe necessary to develop and demonstrate scholarship of application or teaching may be longer

than most commonly employed by institutions in their promotion and tenure guidelines.^{5,7,32,43-47} For dentistry, medicine, and pharmacy, the literature suggested a barrier based upon departmental chairs not recognizing alternative forms of scholarship or providing appropriate mentoring needed for clinicians in the health science clinical faculty members.^{5,7,29,31,37,41,48-52}

Additional potential barriers were identified in 2 of the 4 professions. The medical and nursing literature suggests a conflict between the university and professional schools with respect to tenure and promotion criteria; lack of interdisciplinary cooperation and collegiality between clinicians and scientists; and the lack of assistance or mentoring in writing publications or other activities related to scholarship as barriers to scholarship in health science clinical faculty members.^{5,8,26,27,30,40,42,43,47,49,53-56} Finally, in the medical literature, it was suggested that clinicians have difficulty keeping up with the increased complexity of the biomedical sciences and the work of the clinician educator was less amenable to publication or presentations, thereby

Table 2. Some of the Solutions to Scholarship Barriers Encountered by Dentistry, Medicine, Nursing, and Pharmacy Practice Faculty

	M	N	D	P
Reexamine criteria for promotion of clinical faculty and create a structural framework within the School/College as well as the Institution to foster, assess, and reward all types of scholarship. Make sure mission of institution and faculty work are in alignment.	X	X	X	X
Provide more protected time and/or uninterrupted time and resources to perform scholarship of all types including discovery, integration, or teaching.	X		X	X
Encourage interdisciplinary cooperation and create cross disciplinary initiatives to link the physician scientist and/or basic researcher to the clinician.	X			X
Create a more expansive peer review process for scholarship of application. Include a similar reward system for all forms of scholarship and educate clinicians, department chairs, P&T Committees, and administrators on the different forms of scholarship. Create tenure positions for scholarship of application with a more flexible time frame for tenure and promotion.	X	X		X
Recognize faculty for pursuing innovative and scholarly activities in planning and playing major roles in implementation of school curriculum such as conceptualization, design, implementation or evaluation of new curriculum, interdisciplinary courses, assessment mechanisms, web-based learning and high-quality course syllabi.	X			X
Develop new faculty positions to foster various types of scholarship and clinical practice (i.e. “clinician-educator researcher” for the scholarship of discovery and clinical practice; clinician/teacher and clinician/scholar).	X			X
Create a clinician-educator researcher by providing training in master’s levels or PhD in the area of education and 75% protected time for research endeavors.	X			
Using Boyer’s model of scholarship, require faculty to work in four areas of scholarship including the areas of discovery, teaching, integration and application.	X			
Develop criteria for recognizing and rewarding faculty scholarship related to service including clinical activities, community service, public health service practice, and professional organization activities. Linking the ability of an individual with what that individual sees as being their professional interest and mission will enhance the success of that scholarship.	X			
Using senior faculty role models, create a collaborative mentoring program which may include training in how to approach writing papers and grantsmanship.	X		X	X
Inform faculty about criteria for promotion through new faculty orientation programs.	X			X
Using Kotter’s Model, change the definition of scholarship at the school/college and establish a need and sense of urgency for that change. Form a powerful guiding coalition equipped with the necessary resources to create a clear vision and plan for achieving and evaluating that vision. Make sure to communicate the new vision and empower others for action. Make sure new changes become anchored in the culture.	X			
Create a model of scholarship that requires a high level of discipline-related expertise, breaks new ground or is innovative, can be replicated, documented, peer-reviewed, and has a significant impact.	X			
Assign more importance to the special contributions of clinician educators and have Promotion and Tenure Committees use a variety of methods to assess their abilities (i.e. teaching skills, clinical skills, mentoring, academic administration, developing clinical educational programs, non-research scholarship, clinical research, service coordination, education research.)	X	X		X
Develop a relative value-based measurement system for measuring academic production. This would include three sets of activities with the first being activities that could be completed in a relatively short period of time. The second list could be activities that extend over time, and a third set would be major academic products. It would be up to the academic departments to ensure that the relative values used to measure production reflected the judgments of the members.	X			

(Continued on next page)

Table 2. Continued

	M	N	D	P
Develop a thematic based faculty development curriculum to catalyze clinician faculty to become involved in scholarly projects that increase enthusiasm for research. Themes may include evidence based patient care, must be critical to faculty in the department and focused on clinical concerns commonly encountered in the clinical setting.	X			
Require a strong research component of every faculty member.		X		
Develop and implement a two track system (clinical track and research track) with an emphasis on practice. Support faculty members in establishing practice sites and plans and incorporate practice into reappointment decisions.		X		
Create a formal faculty development model document to be used by chairs and program directors to organize and focus their faculty development efforts.	X		X	X
Regularly review balance of activities in academic posts, particularly between service work, teaching and research.	X		X	X
Develop more structured training programs for junior academics.		X	X	
Create synergy between research and teaching.				X
Require scholarship of non tenure track/adjunct positions for promotion.				X
Find a way to balance scholarly activity and teaching which has been impacted by the increased attention to professional students with increasing didactic contact hours and service due to changing nature of pharmacy education.				X
Design post-graduate residencies to be geared more toward research rather than education and establish more research training fellowships.				X
Decrease the use of non-tenure track appointments for practice faculty.				X
Scrutinize undergraduate research for possible future publications.				X
Attract and retain faculty devoted to scholarship.				X

M = Medicine; N = Nursing; D = Dentistry; P = Pharmacy

limiting their ability to successfully compete and report their scholarly activities.^{18,35,42}

DISCUSSION AND RECOMMENDATIONS

Table 2 is a summary of the suggested solutions adapted from the literature review.^{5,7-8,13,17,23,25-26,29,31-33,35,37,39,41-67}

A solution common to all 4 disciplines was the reexamination of clinical faculty promotion criteria and the creation of a structural framework within the college/school and institution to foster, assess, and reward all types of scholarship. For optimum success it was suggested that the mission of the institution and faculty work should be in alignment.

Suggested solutions found to be common to 3 of the 4 disciplines included the creation of a more expansive peer review process. This would include all types of scholarship and the provision of more protected and/or uninterrupted time and resources to perform scholarship. The literature also suggested that similar reward systems be developed for all forms of scholarship and that clinicians, promotion, and tenure committees and administrators become educated about the definition and various types of scholarship.

Other solutions similar to those found in 3 of the 4 disciplines included creation of tenure positions for scholarship of application which would include a more flexible

timeframe for tenure and promotion; the use of senior faculty role models to create a collaborative mentoring program with training in how to approach writing papers; and grantsmanship, creating a formal faculty development model document to be used by chairs and program directors to organize and focus their faculty development efforts, and the regular review of the balance of activities in academic posts, particularly between service work, teaching, and research. It was also suggested that more importance should be assigned to the special contributions of clinician educators and promotion and tenure committees should utilize a variety of methods to assess an individual's abilities.

Finally, there were 5 suggested solutions common to 2 of the 4 disciplines. These included interdisciplinary cooperation and cross-disciplinary initiatives to link the physician scientist and/or basic researcher to the clinician, recognition of faculty members for pursuing innovative and scholarly activities in planning and playing major roles in implementation of school curriculum, developing new faculty positions to foster various types of scholarship and clinical practice, informing clinical faculty members of the criteria for promotion at new faculty orientations, and developing more structured training programs for junior academics.

CONCLUSIONS

Through this detailed retrospective literature review, documented evidence of barriers to scholarship for health sciences practice faculty members in the areas of pharmacy, medicine, dentistry, and nursing have been identified. In addition, this report has documented that several of the barriers to scholarship identified are common to all 4 of the health sciences disciplines reviewed. These common barriers include the reduction of opportunities for scholarship by clinical service and teaching requirements, inconsistent promotion and tenure guidelines with clinical practice faculty job specifications, lack of awareness of other forms of scholarship as they relate to promotion and tenure, and the lack of role models/mentors for scholarship and clinical activities. In addition, the literature review also identified some suggested solutions or strategies for overcoming these barriers to scholarship. This documented evidence of perceived barriers to scholarship in the literature calls for further investigation and research to describe how training, environment, and other professional development factors influence the perception of scholarship expectations, especially the barriers to achieving an acceptable level of scholarship.

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