

University of Colorado School of Medicine

“Alternative Scholarship” and Faculty Success: Examples of the scholarship of application, integration and education.

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In 1997 the School of Medicine revised its promotion and tenure policies, creating a single, tenure-eligible track. Citing Ernest Boyer and the Carnegie Foundation’s 1990 report, *Scholarship Reconsidered: Priorities of the Professoriate*,¹ the SOM expanded the definition of scholarship to include the discovery, integration, teaching and application of knowledge. The new School of Medicine *Rules* state that,

“All faculty will be required to participate in scholarship, as broadly defined. The products of all scholarship must be in a format that can be evaluated, which would normally mean a written format ...”

The SOM *Rules* define each of the four types of scholarship, and an Appendix (*The Promotions Matrix*) provides more than sixty examples that are pertinent to academic physicians, scientists and teachers. Note that the *Rules* emphasize a broad definition of scholarship, but with two requisite conditions: First, all scholarship must reflect creative, interpretive or innovative work; and second, scholarship is meaningful only when it can be shared, read, understood and critiqued by others. As summarized by Beattie,

“One outstanding characteristic critical to the assessment of all areas of scholarship is the importance of presentation to others. Discovery of new knowledge or integration of previously published information into a novel synthesis does not contribute scholarship unless it is communicated to others. For example, experimental results from scientific experiments that remain forever in a laboratory notebook have no intrinsic value. Similarly, teaching and applied scholarship are also incomplete unless communication to peers and other scholars occurs in addition to presentation to the usual audience of students, colleagues or the public.”ⁱⁱ

Scholarship and the Clinician-Educator

One important objective of the revised *Rules* was to assist the growing number of clinician-educators, by bringing the promotion policies of the SOM and the job assignments of clinically-oriented faculty members into closer alignment. Indeed, over the past several years, the SOM Faculty Promotions Committee has reviewed and

accepted numerous examples of creative scholarship, apart from published, peer-reviewed papers.

For clinicians, the most common products of scholarship have been works of *integration* --- “creative syntheses [or] original interpretations, demonstrating connections across disciplines or bringing new insights to bear on original research.” For example, several clinician-teachers have edited text-books, published case reports, review articles or book chapters or produced educational CD-ROM’s. Others have submitted compendia of practice guidelines, some in electronic or Palm Pilot® format, covering such topics as diabetes management, disease prevention in indigent care settings, smoking cessation, end-of-life care, congestive heart failure and health problems during pregnancy. These works were rated based on several criteria, including originality, grounding in scientific evidence and use and acceptance by peers.

The scholarship of application includes efforts to “build bridges between theory and practice and apply knowledge to practical problems.” Some faculty members have written comprehensive, disease-specific patient care guidelines, which were considered by the Faculty Promotions Committee as examples of the scholarship of application. Those that were adopted by peers and tested in patients, and those that included quality and outcomes measures indicating improvements in patient care, were given the most weight in judging scholarship.

Illustrations: Alternative Forms of Scholarship by Clinician-educators (2000-2004)

The Scholarship of Teaching

One Assistant Professor had more than 90 percent of her work week committed to clinical practice and teaching. She worked in an outpatient clinic, caring primarily for homeless, impoverished and uninsured patients. She had written an educational manual focusing on principles of caring for uninsured and under-served patients, and this manual had been distributed to, and utilized by, medical students and residents rotating at several homeless and indigent care clinics. Upon review, this manual was judged to be an excellent example of teaching scholarship. It was also an example of the scholarship of application, as it described innovative techniques to improve health care delivery in a particularly challenging health care setting.

A creative family physician (Assistant Professor) was a specialist in end-of-life care and the spiritual aspects of healing and caring. In addition to his busy clinical practice, he served as medical director of several hospices and hospice alliances. He developed competency-based curricula for medical students and family medicine residents, covering the care of dying patients, pain palliation and spirituality. This curriculum was adopted by family medicine residencies throughout the state. In addition, his work in curriculum development had been recognized nationally, as evidenced by a large number of invited presentations and by receipt of a large training grant.

An Assistant Professor maintained a full-time clinical practice in anesthesiology, in both the operating room and in the pain care clinic. He was promoted to Associate Professor based primarily on his outstanding contributions to clinical service and residency education. His curriculum vitae listed three peer-review articles and two book chapters. The Faculty Promotions Committee was also impressed by two unpublished “products” representing the scholarship of teaching. One was a novel Pain Medicine Policy and Procedures Manual, which served as an educational and clinical practice guide for residents and

faculty. The second was a thorough revision of the department's Acute Pain Service Resident Program Manual. He had also written and distributed evidence-based guidelines for patient-controlled epidural analgesics and several protocols for use of specific analgesic drugs, which were considered as examples of the scholarship of application.

The Scholarship of Integration

A psychologist was promoted to Associate Professor on the basis of tangible evidence of scholarship in a well-defined area of focus and expertise. She was a specialist in the psychology of healing after severe burn injuries. She had presented numerous papers at national meetings and had written two patient education booklets that described the stages of recovery after burns, the need for supportive services and the benefits of burn camps for children. She had also helped write and produce 5 peer-reviewed videotapes about the emotional experiences of children with burn injuries, aimed at audiences of parents, peer providers and community leaders.

A faculty radiologist had focused on computer-assisted learning in radiology, both in her department and on a national stage. She had developed a computerized radiology teaching curriculum for medical students and a web-based radiology teaching file for residents and students. These learning tools included evaluation worksheets that enabled medical students to provide feedback to the department in order to improve the teaching files. She published an invited, non-peer reviewed article summarizing this work. She also wrote an extensive 150-item question-and-answer self-assessment program for community-based radiologists. The questions, which covered key topics in chest radiology, were thoroughly referenced, researched and tested. They were adopted by the American College of Radiology's Continuous Professional Improvement project and are now available to all practice-based radiologists around the country. These contributions were judged as outstanding examples of the scholarship of teaching and integration.

The Scholarship of Application

An Assistant Professor served as medical director of several busy ambulatory clinics that were described by external referees as among the best-known and most imaginative in the nation. He had received several large practice management grants, which had allowed him to develop, test and implement several innovative health care delivery techniques. Among the most novel were systems to integrate the care delivered by students, physicians, physicians' assistants and other health professionals (in such disciplines as psychology, pharmacy, occupational medicine and sports medicine). He had also developed state-of-the-art practice management curricula for learners in these settings, which outlined novel approaches to integrate clinical care and teaching and conserve resources. There was evidence that his practice management curricula and programs had led to improvements in health care delivery and had reduced overhead and other costs. After careful review, the Faculty Promotions Committee accepted these achievements as products of the scholarship of application.

A busy Assistant Professor, who specialized in infectious diseases, devoted about 80 percent of his working week to patient care duties and teaching. He served as director of a busy clinic for patients with AIDS and HIV-related diseases. As practice director, he developed several innovative strategies to coordinate medical and pharmacy services, and he demonstrated that these strategies reduced the need for hospital admission for patients with AIDS. He submitted carefully analyzed data demonstrating dramatic reductions in mortality and costs, and each of these improvements in outcomes exceeded national benchmarks and the improvements that might be expected only from the use of newer drugs to treat AIDS and AIDS-related infections. Although the Faculty Promotions Committee encouraged him to publish his results more widely in peer-review journals, the committee accepted his written practice descriptions, interventions and outcomes summaries as meritorious examples of the scholarship of application.

A member of the geriatrics faculty spent several years developing methods to improve the medical care of older patients, based on early recognition of common geriatric syndromes, combined with estimates of functional decline, mortality risk and adaptive capacities. His written scholarship included five “white papers” invited by Health Maintenance Organizations, professional societies, a national foundation and two government agencies (Medicare and the Congressional Budget Office). These papers outlined health services research priorities for geriatric care and formed the basis of a later funding initiative by a large national foundation. While not published in traditional medical journals, his work had been accepted by a broad and respected community of scholars and policy-makers and had led to new insights regarding the delivery of health services to senior citizens. This body of work was rated as an exceptional example of the scholarship of application --- activities that address consequential public health problems, propose solutions and help shape public policy.

An Assistant Professor in the Department of Family Medicine served as Medical Director of the state’s second-largest community health center. He had emerged as a state leader in efforts to strengthen the health care safety net for low income and vulnerable populations. He had obtained funding from multiple sources to develop and implement innovative programs to improve health care access among immigrant and migrant populations in urban Colorado, including reproductive services for teens, mobile health stations, expanded mental health services, diabetes screening programs and collaborative efforts with the Secretary of Health in Guanajuato, Mexico. His scholarship was also innovative and influential. One example was the monograph, “*Entérese! Una guía de supervivencia para los recién llegados a Colorado* (Welcome! A “survival” guide for recent arrivals to Colorado). Preparation and statewide distribution of this guidebook was funded by a grant.

ⁱ Boyer EL. Scholarship reconsidered: Priorities of the professoriate. Princeton, N.J.: Princeton University Press and the Carnegie Foundation for the Advancement of Teaching, 1990.

ⁱⁱ Beattie D. Expanding the view of scholarship: Introduction. Acad Med. 2000;75:871-876.