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Advancing Educators and Education: Defining the Components and Evidence of Educational Scholarship

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Summary Report and Findings from the AAMC Group on Educational Affairs Consensus Conference on Educational Scholarship

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*Summary Report and Findings from the AAMC Group on Educational Affairs
Consensus Conference on Educational Scholarship*

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Background

Evolutionary Forces and Benchmarks in Defining Educational Scholarship

In the early 1990s, the academic medicine community rarely used the terms *education*, *teaching*, *scholarship*, and *academic promotion* in combination with each other. Teaching was expected as part of academic citizenship, but not sufficient for academic promotion. This perspective on teaching dominated academic medicine until the Carnegie Foundation for the Advancement of Teaching published Ernest Boyer's *Scholarship Reconsidered: Priorities of the Professoriate*.¹ Boyer's work reframed and expanded the discussion regarding roles, expectations, recognition, and advancement of educators, providing a framework from which to challenge the prevailing concept that "everyone teaches," and replacing it with one that examined teaching as a form of scholarly work.² The discussion was enriched by publication of *Scholarship Assessed*,³ which articulated common criteria for all forms of scholarship: clear goals, adequate preparation, appropriate methods, significant results, effective presentation, and reflective critique.

Concurrently, the emergence of certain external forces—research dominance in medical schools as well as dependence on clinical revenue for operations budgets—changed the academic medicine environment and created "crises of mission" related to medical school faculty roles and rewards. School leaders began to recognize and respond to the crisis, prompting Whitcomb⁴ to report "widespread agreement that those members of the faculty who are most committed to, and involved in, the education of medical students must be supported and rewarded, both professionally and financially...." Medical schools are "cognizant that faculty appointment, promotion, and tenure policies must reflect the changing roles and responsibilities of medical school faculty" by greater recognition of education.

Evidence is slowly emerging in support of educator recognition, including education as a viable career track,⁵ the use of educator portfolios for academic promotion,⁶ the ongoing examination of elements used by promotion committees,⁷ expectations of those directing medical student clerkships from education-related professional organizations,⁸ development of compacts between residents and their teachers,⁹ and the proliferation of educational academies and societies.¹⁰

National organizations have played a key role by clarifying issues and potential solutions related to educator recognition. In particular, the AAMC's Group on Educational Affairs (GEA) has long recognized that excellence in physician education is driven by faculty members, and that they must be recognized and rewarded as educators. Beginning in 1996, GEA members began to elucidate the criteria for scholarship in medical education with a series of case studies,¹¹ and then defined scholarship's core elements and the associated resources and infrastructure to support educators as scholars.^{10, 12} GEA members documented the dramatic increase in the use of education portfolios in the U.S. medical school academic promotion process—from 5 schools in 1990 to 76 schools in 2003—which reflected increased attention to academic promotion of educators.⁶

However, despite the emergence of a common set of educator activity categories, the evidence presented in portfolios was highly variable. This variability underscored the need to articulate a set of common standards for selecting, presenting, and evaluating evidence of educational contributions for academic promotion.

In this paper, we provide background for the consensus conference and present a set of standards for use in the educator academic promotion process. We delineate the contents of five literature-based educator activity categories. For each, we present standards for documenting quantity,

quality, and scholarly engagement; a framing model emerging from the conference. The appendix includes illustrative examples for data presentation by category as part of educators' academic promotion materials. The model, standards, and examples are derived from the literature and the AAMC's GEA Consensus Conference on Educational Scholarship, held February 9–10, 2006, in Charlotte, N.C.

Need for Educational Scholarship Consensus

The increased use of education portfolios and the emerging consensus regarding educator activity categories reflects the growing attention to education-related contributions in the academic promotion process. However, the variability in formats and types of evidence presented for academic promotion has been confusing. Therefore, the GEA heeded the call to elucidate a set of common standards to guide educators and faculty promotion committees.

In June 2004, the GEA Steering Committee approved a concept proposal to host an AAMC GEA Consensus Conference on Educational Scholarship and convened a planning group. The planning group's implementation proposal, approved in November 2004, adapted the consensus conference model used for the 1992 consensus conference on standardized patients.¹³

The goal of the Consensus Conference on Educational Scholarship was to identify points of agreement and disagreement to facilitate continued evolution of the field around three target areas:

1. Educator activity categories (e.g., curriculum development, advising)
2. Appropriate forms of evidence and presentation displays for each category
3. Areas that need further investigation specific to educational scholarship.

Conference Design and Organization

Conference Structure and Format

Achieving consensus on educational scholarship, both conceptually and pragmatically, in evaluating the work of faculty for key decisions like academic promotion requires interaction among key stakeholders, including deans, senior educational administrative leaders across the continuum, faculty affairs leaders, department chairs, and representatives of professional societies. Representatives from the AAMC's Council of Deans, Council of Academic Societies (including the Society of Directors of Research in Medical Education), faculty affairs, and the GEA were invited to participate in the consensus conference. Conference announcements were circulated to both the GEA and specialty-specific listservs.

Registrants received a preconference electronic information packet that included three articles, which provided a common foundation to identify and build on what is known about educational scholarship,^{2, 14, 15} along with two optional readings.^{6, 12} The one-and-a-half day conference began with a review by Deborah Simpson, Ph.D., of the conference's background, purpose, and structure, followed by two plenary sessions to set the context for discussion. In the first plenary session, Janet Hafler, Ed.D., and Ruth-Marie E. Fincher, M.D., provided an overview of the GEA's involvement in medical education scholarship and the current state of the art. Building on the frameworks of Boyer and Glassick, they emphasized that scholarship products must be public, open to evaluation, and presented in forms that others can build upon.¹⁶ Hafler and Fincher drew the distinction between excellence, such as an outstanding teacher, and a scholarly approach in any given activity (one informed by the literature or other programs) as part of a pathway to scholarship.¹⁷

Patricia Hutchings, Ph.D., vice president of the

Carnegie Foundation for the Advancement of Teaching, framed the second plenary session around four key questions: (1) Is it scholarship? (2) Is it excellent scholarship? (3) Does excellence take different forms at different career stages? (4) What needs to be done? Using a combination of case studies to illustrate the answers, Dr. Hutchings reiterated the three parameters of scholarship—that it is public, peer reviewed, and available in a platform that others may build on¹⁶—and emphasized that the peer-review element requires a capacity for judgment about quality by a community of experts using common criteria. The criteria for judging scholarship with clear goals and adequate preparation are well established based on Glassick's work, but the capacity and supporting organizational infrastructure and culture for judgment by expert educational reviewers is still evolving.¹⁸

At the conclusion of the two plenary sessions, participants attended one of five preassigned working groups. Each was assigned an educator activity category (curriculum development, teaching, mentoring/advising, educational administration/leadership, learner assessment)⁶ and charged with defining the contents of a promotion portfolio for the assigned category. Three faculty portfolios provided by the planning committee triggered the discussion. The working groups reported their findings to the larger group by answering three questions:

1. What educator activities should be included in the category?
2. What types of evidence should be included for review in the academic promotion process?
3. How should a faculty member present the activities and associated evidence in a promotion portfolio?

One or two members of the conference planning committee facilitated each group and presented its findings to the assembly. After the discussions, facilitators met to review findings and frame the reports

for presentation to the entire conference. Each working group's six-minute report focused on areas of consensus specific to the three questions.

Following the reports and reactions from conference attendees, each working group reconvened for about 90 minutes to reconsider and modify its findings in light of the assembly presentation and discussion. Each group then identified common themes across the working groups as areas of consensus. These convergent themes became the conference's core consensus findings on educational scholarship.

A panel of three discussants concluded the conference by providing additional perspective on the emergent themes. The panelists, each representing key stakeholder constituencies, were

- Darrell G. Kirch, M.D., then dean, College of Medicine, and senior vice president for health affairs, Pennsylvania State University, chief operating officer, Milton S. Hershey Medical Center; he is now president, Association of American Medical Colleges.
- Patricia Hutchings, Ph.D., vice president, Carnegie Foundation for the Advancement of Teaching.
- LuAnn Wilkerson, Ed.D., professor of medicine and senior associate dean for medical education, David Geffen School of Medicine, University of California at Los Angeles, and the Society of Directors of Research in Medical Education representative to the Council of Academic Societies.

Conference Working Groups' Data Records and Synthesis

Following the conference, attendees were contacted to complete an electronic evaluation form focusing on the conference's overall value, format (including preparatory readings), key elements, and take-home lessons. The evaluations were compiled by the AAMC conference planning staff and forwarded to the working group for review and analysis.

Each working group facilitator assembled findings based on newsprint, worksheet, and field notes from the sessions. The assembly presentations were stored as PowerPoint presentations and audiotaped; the discussant panel's remarks were also audiotaped. Transcriptions of the working group findings and the discussant panel's remarks were forwarded to the facilitators. Each facilitator drafted detailed findings specific to the three conference questions and forwarded the draft documents to their conference working group members for comment. Revised working group reports were then forwarded to the conference chair Dr. Simpson, for synthesis.

Participants Reflected Key Constituencies

The 111 conference attendees represented key stakeholders and included 6 medical school deans, 5 department chairs or vice chairs, 32 dean-level representatives from academic affairs or education (across the physician education continuum), 16 dean-level faculty affairs representatives, 23 dean or director-level individuals involved in faculty development or medical education research, and 3 directors of medical school academies or societies. The spectrum of disciplines and medical specialties common to U.S. medical schools was also represented. Seven participants from the AAMC represented medical education; institutional, faculty, and student studies; organization and management studies; and medical school affairs.

Conference Evaluation by Attendees

Sixty-eight percent of conference attendees (77 of 111) submitted an evaluation. Overall, they felt the conference was valuable, with 92 percent reporting that the "meeting was worth their time away from their institution."

Respondents were asked to list the three most and three least valuable conference components; 212 of the former and 65 of the latter were submitted. Content analysis revealed a series of common themes. A frequently cited strength was the focus on a national consensus for the definition of educational scholarship ("that it happened at all"),

networking, and working with others in the medical education community on a common issue. Other commonly valued components were the conference leaders' expertise; Patricia Hutchings's plenary presentation and insights, as well as other discussants' perspectives; attendance of key leaders, including the incoming AAMC president; the breadth of constituencies represented ("fascinating guest list"); and the small groups. A consistent theme was the opportunity to interact with colleagues on an issue of shared importance. The conference's overall value was best captured by one participant: "Although my head is swimming and I am exhausted, I have some very exciting new ideas that I am working on—and hope that the AAMC will move this agenda forward."

Most frequently cited, least-valued components focused on three areas: time limitations of breakout groups, overlap of preconference readings with the first plenary content, and the limited application of the readings in the discussions relative to the breakout groups. "Having to artificially separate the educational activities (teaching, assessment, etc.)" seemed to limit the depth of discussion.

Results

Conceptual Framework: Quantity, Quality, and Engagement with the Educational Community

Educators add value to their institutions by contributing to the educational mission and/or by advancing knowledge in the field of education. Figure 1 (on page 8) frames a model for documenting the quantity and quality of educator activities along with evidence of the educator's engagement with the educational community. Engagement is documented with evidence that educators' work is informed by what is known in the field—a scholarly approach—and how, over time, educators contribute to knowledge in the field—educational scholarship. There is both synergy and tension between faculty's roles as educators and as contributors to the broader medical education field. For promotion and tenure decisions, each institution must determine the relative balance of these roles based on its mission and infrastructure support for education.

Evidence of educational excellence must document the quantity and quality of educational activities:

- **Quantity:** Descriptive information regarding the types and frequencies of educational activities and roles.
- **Quality:** Evidence that activities achieve excellence using comparative measures, when available.

An educator must engage with the broader educational community to demonstrate a scholarly approach.¹⁹ The type of engagement—scholarly approach and/or educational scholarship—and the breadth of engagement—local, regional, national, or international—required for academic advancement may vary by faculty rank and institution.²⁰

- **Scholarly Approach:** Faculty take a scholarly approach when they systematically design, implement, assess, and redesign an educational activity, drawing *from* the literature and “best practices” in the field. Documentation describes how the activity was informed by the literature and/or best practices.

- **Educational Scholarship:** Faculty engage in educational scholarship by both *drawing upon* resources and best practices in the field and by *contributing resources* to it. Documentation begins by demonstrating that an educational activity product is publicly available to the education community in a form that others can build on.²¹ The product may be available at the local level—in the department, medical school, or university—or at the regional, national, or international level. Once a product is public and in a form that others build on, peers can assess its value to the community applying accepted criteria.^{3, 15}

Educators seeking academic promotion may present evidence focused on a single educational activity category, such as teaching, or in multiple categories, such as curriculum, learner assessment, and/or leadership. The types and forms of evidence may vary by category, but documentation should be both quantitative and qualitative and concisely presented using common terminology, and displayed in easy-to-read formats using tables, figures, or graphs.

Educator Activity Categories, Criteria, and Evidence

The categories of teaching, curriculum development, mentoring/advising, educational administration/leadership, and learner assessment emerged from the literature as common formats in presenting educational contributions for academic promotion.¹¹ For each category, we present a brief definition and illustrative types of educator activities, followed by descriptions of types of evidence to document quantity, quality, and engagement with the educational community.

Teaching

Teaching is any activity that fosters learning, including direct teaching and creation of associated instructional materials. Examples of direct teaching include lectures, workshops, small-group facilitation, role modeling in any setting (such as ward attending), precepting, demonstration of procedural skills, facilitation of online courses, and formative feedback. Summary judgments that teachers provide to learners in the form of grades are also

included in the learner assessment category. Instructional materials are included in the teaching category when they are developed to specifically enhance instructors' own presentations, such as media, handouts, or interactive materials. Development of a longitudinal set of educational activities would fall into the curriculum development category.

Quantity: Documentation of the frequency and duration of teaching along with a description of one's role should be presented in an easy-to-read, concise format. A listing of instructional materials authored with a brief description of their purpose, format, and length should be included. The use of tables and figures rather than narrative facilitates concise presentation.

Quality: Multiple sources and types of data should be used to demonstrate teaching excellence. Include comparative data of peer-group performance using the same source and method whenever possible. Summarize narrative comments using qualitative analysis methods. Data sources might include

- Learners' confidential evaluations of instructors' teaching using standardized forms with open-ended comments. In settings with small numbers of learners, consultant-facilitated discussions can yield narrative data for qualitative analysis. Data may also be obtained at the end of teaching sessions, rotations, or years, and post-graduation, to assess short- or long-term impact.
- Peer evaluation of teaching using a standardized format and process adds an important dimension that complements student evaluation.
- A list of teaching awards and honors accompanied by descriptions of their selection process and criteria are additional forms of teaching excellence documentation.
- Evidence of learning, the key outcome of teaching, is a strong indicator of excellence. An array of local learner data may be available including pre- and post-teaching assessments of learner performance, self-reported learning outcomes, ratings of educational objectives

achievement, or analysis of narrative data, such as learning portfolios or critical incidents.

- When learner performance data on standardized national measures is used to assess teaching effectiveness—such as in-service examinations, National Board of Medical Examiners (NBME) Subject Tests, or the United States Medical Licensing Examination—it must be carefully interpreted, as connecting learner performance to individual teachers is difficult.

The methods that demonstrate and document the value of one's own instructional materials are similar to those used for curriculum development (see next section). Multiple data sources and types should be provided when possible, including

- Learner evaluations using standard rating scales or narrative comments, including comparative evaluation to peers.
- Peer review by members of a teacher's division, department, or institutional committee can help document the accuracy and educational value of the content, with an eye toward objectives, format, organization, and innovation.

Engagement with the Education Community: A scholarly approach requires that instructors apply the principles and findings from the education literature (e.g., competency-based education, deliberate practice) to their teaching, along with development of associated instructional materials. Evidence of engagement with the larger education community can be documented through

- Descriptions of how teachers' approaches or uses of instructional materials were informed by the literature or "best practices."
- Graphical presentation of a comparative analysis of teachers' own materials with "best practices" in the field, documenting relative strengths and weaknesses.
- Instructors' reflections on their own teaching or on critiques by others, and the effect of those reflections on subsequent teaching activities.

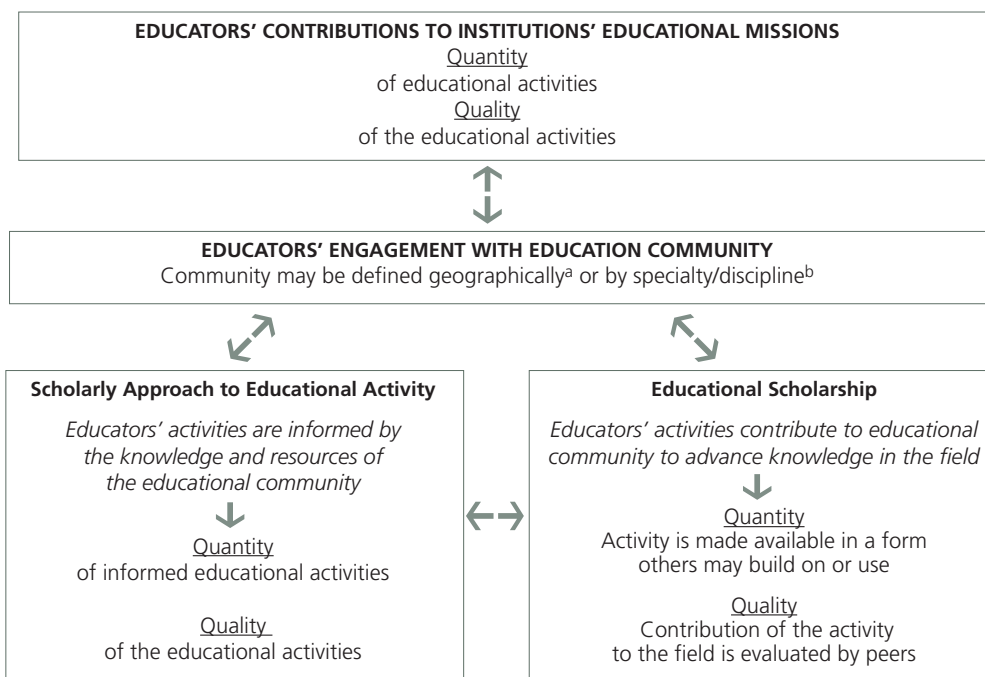
Evidence of scholarship in teaching, as in all categories, requires that educators make products publicly available for peer review so their contributions to the educational community can be evaluated. Public presentation and peer review may be internal through a division, department, teaching society, or education committee, or external through such forums as the AAMC's annual or regional meetings, AAMC's MedEdPORTAL®, the Health Education Assets Library, Family Medicine Digital Resource Library, or other peer-reviewed repository. Interactive learning exercises (either Web-based or face-to-face), slides sets with speaker notes, problem-based learning or other clinical cases, and new models and strategies for teaching—all are examples of teaching products that contribute to the educational community. Documentation of these contributions include

- Inclusion of the product in a peer-reviewed venue or repository
- Evaluations from a conference presentation, teaching awards, or recognition with annotations regarding selection process and criteria
- Data demonstrating adoption by other faculty
- References or citations to the product in other peer-reviewed materials
- Descriptions of how others have built on or adapted the product for their own use.

Curriculum

Curriculum is defined as a longitudinal set—that is, more than one teaching session or presentation—of designed educational activities that includes evaluation. Curricular contributions may occur at any training level—medical student, resident, or grad-

Figure 1.
Documentation Frame for Educators' Academic Advancement
Based on Contributions to the Institution and Engagement with the Education Community



^a Local (department/division, university, community), regional, national/international

^b Examples include medicine, pediatrics, surgery, biochemistry, genetics, anatomy, pathology, educational evaluation, and instructional technology.

uate student, or continuing medical education; in various educational venues—course, clerkship, rotation, theme-threaded cross years, faculty development, or community program; and may be delivered face-to-face or electronically.

To include an activity in the curriculum category, educators must answer four questions: (1) What is the educational purpose (i.e., goals, objectives) of the activity? (2) Which learning experiences are most useful in achieving those purposes? (3) How are those learning experiences organized and longitudinally sequenced for effective instruction? (4) How is the curriculum's effectiveness evaluated?

Quantity: For each curricular piece authored, documentation should include a cogent description of its purpose, intended audience, duration, design, and evaluation. If the curriculum was coauthored, each entry should document the candidate's role, content contributed, and expertise provided, such as curriculum, technology, or assessment.

Quality: Documentation of a curriculum activity and associated evidence of outcomes and quality should include²⁴

- Learner reactions and ratings
- Outcomes, including the impact on learning (e.g., course examinations, NBME subject scores, in-service examination scores, or observation of learner performance)
- Graphic displays of improvement over time (e.g., its relation to previous curriculum offerings).

Engagement with the Education Community: A scholarly approach to curriculum development requires demonstration that the design was informed by the literature and “best practices.” The curriculum authors must note how it was influenced by relevant literature or other educators. Positive and negative results should be presented to advance educational knowledge and build on the authors' experiences.

Educational scholarship in curriculum requires making it public in a form that others can use, such as course syllabi, learner assessment tools, or instructor guides, and includes

- Peer review by local experts, the institution's curriculum committee, or accreditation reviewers
- Invitations to present curriculum work at meetings, supplemented by documentation of the presentation's quality
- Peer-reviewed or invited presentation at regional, national, or international meetings
- Acceptance of curriculum material to a peer-reviewed repository such as AAMC's MedEdPORTAL
- List of institutions where the curriculum has been adopted, including the author's home institution
- Invitations for curriculum consultation from other departments or schools, including tracking of the consultations' use
- Number of citations in other instructors' curricula.

Advising and Mentoring

Educators frequently serve as advisors and mentors in the professional development of learners and colleagues. These activities can have a profound impact on advisees' careers and, in turn, on the profession. Advising and mentoring are developmental relationships encompassing a spectrum of activities, in which educators help learners or colleagues accomplish their goals. More specifically, mentoring implies a sustained, committed relationship from which both parties obtain reciprocal benefits. Advising is a more limited relationship that usually occurs over a limited period, with the advisor serving as a guide.

Documentation of mentoring and advising activities must effectively describe the nature of the relationships and their effectiveness in helping advisees meet their goals, using quantitative and qualitative data.

Quantity: Quantitative data should include the number of learners and colleagues mentored or advised, and when appropriate, the names and positions or status, and an estimate of time invested in each relationship (e.g., duration, frequency of contact, and total hours).

Quality: Educators' effectiveness as mentors and advisors is demonstrated through advisees' goal achievement. Evidence of productive relationships may be documented by

- Evaluations of advising and mentoring effectiveness from advisees using standardized forms with comparative ratings
- A listing of advisees' significant accomplishments, including publications and presentations, and the development of tangible educational products, recognitions, and awards
- Narrative comments from advisees may also provide evidence of a relationship's effectiveness in facilitating goal achievement. When available, comparative data in the form of historical or discipline-based standards should be presented.

Engagement with the Education Community: Mentoring and advising has an emerging body of literature, supported by resources, guides, and conferences. Evidence of scholarly engagement in this category, as in all others, can be demonstrated by

- Participating in professional development activities to enhance skills in mentoring and advising
- Adopting effective mentoring strategies with documented links to the literature
- Writing an institutional guide informed by the literature and "best practices"
- Designing an effective program guided by current evidence
- Leading initiatives that improve institutional mentoring and advising practices.

Scholarship related to mentoring and advising may be demonstrated by

- Receiving invitations to critically appraise mentoring programs, and providing documentation of the results and the appraisal's impact

- Posing investigational questions about mentoring/advising, selecting methods to answer them, collecting and analyzing data, making the results public, and obtaining peer review
- Securing program development funding through a peer-reviewed process
- Conducting skill enhancement training sessions at professional meetings
- Publishing peer-reviewed materials in print or electronic formats, such as institutional mentoring guides
- Convening scholarly conferences on mentoring, serving as a mentoring consultant to professional organizations, being invited to serve as a peer reviewer of mentoring or advising works, receiving mentoring or advising awards, and having success in competitive funding for innovative mentoring-related projects.

Educational Leadership and Administration

Exceptional educational administrators and leaders achieve results through others, transforming organizations through their vigorous pursuit of excellence. Key features that educational administrators or leaders should document to demonstrate their work's value for promotion consideration include (1) active and continuous pursuit of excellence; (2) ongoing evaluation; (3) dissemination of results; and (4) maximization of resources.

Quantity: The nature of leadership projects and their duration and quantity should be described in an easy-to-read, concise format along with the roles leaders played.

Quality: The pursuit of excellence should be the core of all administrative and leadership actions; effective leaders challenge, advance, and transform the field. They create a sense of urgency, develop coalitions, communicate vision, develop plans, evaluate achievements, garner resources, and inspire others in the pursuit of common goals. Effective administrators and leaders manage resources efficiently, and must collaborate with and mentor others to achieve change.

Documentation of quality in leadership includes a concise description of projects, including

- Leadership role and project dates
- The context where the change occurred, as well as the process, including problems identified, goals established, and actions taken
- Evaluation including delineation of outcomes
- Financial and human resources, both new and existing, as change requires leaders and administrators to deploy resources to achieve desired goals.

Engagement with the Education Community: When administrators' resource management or leaders' organizational transformation is informed by the literature and best practices, they have made the transition to active engagement with the larger educational community.

A scholarly approach to leadership and administration is demonstrated by

- Making changes based on the literature and best practices.
- Creatively designing and evaluating improvements, and making revisions based on local feedback or in light of theoretical frameworks, prior research, best practices, and external peer review
- Using pre- and post-assessment or other designs (e.g., cohort performance on licensing, in-service training, board certification examinations, accreditation surveys) or newly developed tools to measure outcomes
- Demonstrating attainment of objectives or benchmarks associated with successful change (e.g., AAMC Graduation Questionnaire and learner ratings of teachers; courses/rotation enrollments and evaluations)
- Documenting ongoing quality improvement, drawing from the knowledge and resources of the educational community

- Evaluating leaders' effectiveness using 360-degree evaluation with peer comparisons, benchmarking, or external peer review
- Employing self-reflection informed by the literature or best practices in the field.

The scholarship of educational leadership is evidenced by sharing innovations with the educational community through materials, documents, or presentations, and through others' recognition of the work's value. Dissemination of findings makes innovations visible to the community, creating a public forum for discussing them and advancing the field.

Documentation of educational scholarship would include

- List of invited and peer-reviewed presentations at local, regional, national, and international professional meetings, along with visiting professorship presentations
- Quantity and quality of publications
- Awards received with annotations regarding selection criteria and process
- List of institutions that have adopted an innovation
- Acceptance of a new curriculum model to AAMC's MedEdPORTAL, with impact inferred from the number of hits the site received and the number of schools that have adopted the curriculum
- List of resources obtained by source—such as foundations, grants, or internal awards—as evidence that others have judged the innovation worthy of investment.

In summary, leaders and administrators commit to excellence by making a significant difference, advancing the field, or demonstrating a positive impact on others. To demonstrate commitment to excellence, educational leaders must innovate, garner, and maximize resources, and evaluate

actions. Leaders' active engagement with the educational community distinguishes leadership excellence from scholarship, as leaders draw on the community to inform action and then contribute back to advance the field.

Learner Assessment

Learner assessment is defined as all activities associated with measuring learners' knowledge, skills, and attitudes, and must include at least one of four assessment activities:

1. Development: Identifying and creating assessment processes and tools
2. Implementation: Collecting data using processes and tools
3. Analysis: Comparing data with correct answer key or performance standards
4. Synthesis and presentation: Interpreting and reporting data to learners, faculty, and curriculum leaders.

Quantity: Documenting an assessment activity's size and scope should begin with a brief description of the event using jargon-free language understandable to promotion and tenure committee members. This description should include information about faculty's role in each assessment component along with the size and nature of the learner population being assessed, the size of the assessment, and the intended uses of the information.

Quality and Engagement with the Educational Community: Documenting quality in learner assessment should provide evidence that the evaluation meets established reliability and validity standards, summarized in quantitative and narrative formats. When data from learner assessments are used in "high stakes" decisions—such as grades or promotion—the assessment must be well-grounded in the existing knowledge base drawn from the educational measurement field.

Glassick's six criteria provide a systematic framework for a scholarly approach in determining the quality of assessment contributions:

1. Goals: A clear statement of assessment goals and the educator's particular contributions to the assessment process
2. Adequate preparation: Description of the author's prior experience or literature upon which the assessment was based
3. Appropriate methods: Details of how each design phase's methods match known best practices
4. Significant results: Information about the quality of results according to reliability and validity standards
5. Effective presentation: A succinct and effective summary of the results and lessons learned to stakeholder groups (e.g., learners, administrators, peers, and the assessment community)
6. Reflective critique: Plans for improving similar assessments in the future.

Scholarship in learner assessment must include documentation that activities were peer reviewed and that processes or tools involved have been shared with the educational community to enhance best practices. Faculty involved in any design phase may present documentation associated with

- Presentations on the assessment process or outcomes to local audiences, such as curriculum committees or internal reviews in preparation for an RRC visit
- Peer-reviewed presentations and workshops at professional meetings, or invited presentations
- Acceptance of the assessment tool in a peer-reviewed repository
- Assessment research presented at national meetings or published in peer-reviewed journals.

Next Steps

Crystallizing and Building on our Current Knowledge

Institutions reward what they value. If educational excellence and scholarship are important to our institutions, educators' activities must be recognized and rewarded. No longer can educators' activities be viewed as "largely private work, guided by tradition, but uninformed by shared inquiry or understanding of what works."²⁴ If our institutions are to demonstrate that they value education through academic promotion of educators, these activities must become public and open to peer review.

Four tenets for making educators' work public and available for peer review emerged from our synthesis of the literature and consensus conference discussion.

1. Educators contribute to institutions' educational missions through activities in teaching, curriculum development, mentoring and advising, leadership, and learner assessment. Contributions in these areas must be valued in academic promotion decisions to demonstrate that institutions' actions are aligned with their educational missions.
2. Educators' contributions can be judged through the effective presentation of evidence associated with quantity, quality and, when relevant, evidence of engagement with the educational community. Evidence of such engagement demonstrates that educators draw upon the literature and best practices (scholarly approach) or contribute when appropriate to the medical education field (scholarship).
3. Promotion expectations should be congruent with the activities assigned to faculty members. Judgments regarding educators' contributions in assigned responsibility areas should play an important role in faculty promotion decisions.

4. The standards for academic promotion must not exceed the available educational support infrastructure within institutions and from regional, national, and international professional organizations. Support infrastructure includes

- Forums for educators to share their work and have it peer reviewed;
- Faculty development to enhance educators' expertise and learn about new advances in the field;
- Access to educational journals and repositories; and
- Physical, virtual, and technical resources.

These tenets are intended to be evidence-based guideposts as we lead our institutions through a process of valuing education and educators, helping to align academic promotion standards with the roles and tasks needed to fulfill our unique educational missions. How do we provide this leadership?

Unresolved Issues: Opportunities for Crucial Conversations about Education

Hutchings and Huber²⁰ challenge us to create a "teaching commons" that promotes dialogue, sharing, and improving upon medical education's best practices and innovations. In a teaching commons, educators and other stakeholders come together to engage in crucial conversations, informed by the literature and guided by teaching and learning experiences.²⁰ Based on the dialogue begun at the consensus conference and ongoing discussion among the authors, four unresolved issues were identified. We present these issues to stimulate engagement within our educational communities, resulting in conclusions based on best practices and scholarly inquiry.

1. **Infrastructure:** Successful educators, like successful researchers or clinical practitioners, need resources to fulfill the educational mission, such as protected time, consultation, journal

access, and physical facilities. Unanswered questions include

- What essential institutional or organizational infrastructure elements are needed to support educational excellence and scholarship? Examples include peer evaluations of teaching, psychometric analysis of learner assessment tools, and faculty development.
 - How can we facilitate effective dialogue among key constituencies—including medical school deans, academic societies, and teaching hospitals—to develop an infrastructure that values educators and educational scholarship?
 - Are academies and societies the most effective infrastructure for engaging educators?
2. **Breadth of Engagement with the Community:**
- What level of engagement—internal or external, local or international—is needed to demonstrate meaningful involvement in the community of educators, and in what content areas?
 - Should expectations regarding the level of engagement vary by faculty rank or available institutional resources?
3. **Category Boundaries:** The activities germane to each educational category have been clarified; however, definitive boundaries between categories remain elusive.
- When does the scope of instructional materials developed to support a specific direct teaching activity shift from the teaching to curriculum category?
 - When does teaching become a longitudinal one-to-one mentor relationship?
- Does further clarification of educational activity category boundaries constrain educators' needs for flexibility?
4. **Judging Scope and Sustained Individual vs. Group Accomplishments:** Our promotion committees have long-standing traditions and standards for judging accomplishments. However, educators' activities are typically driven by institutional needs (e.g., new curriculum, accreditation standards, or assessment mandates) and are collaborative group efforts. Questions needing further study include:
- Must institution-specific guidelines be developed to clarify the number of “within” and “between” category inclusions expected for academic advancement?
 - What levels of sustained activity must educators demonstrate to “count” in academic promotion decisions?
 - How should educators present group accomplishments so that both team and individual contributions are recognized? This issue is also faced by our research and clinical colleagues, who must develop program project awards and work in multidisciplinary patient care teams. Educators' performance assessment and leadership expertise may position them to develop school-wide processes for judging individual and group accomplishments.

Summary

We know the educator activity categories and the associated evidence needed to assess faculty members' accomplishments for academic promotion. Now, we must seize the opportunity to disseminate and build on this knowledge. Using existing local and national forums—and creating new venues when necessary—we must communicate what we know about documentation for academic promotion, and stimulate conversations and systematic inquiry to answer new questions. If we succeed, communities of educators will emerge. These communities will be populated by individuals whose contributions to our unique mission—improving the health of the public through excellence in education of physicians²⁵—are supported through a strong educational infrastructure, and valued through academic promotion and recognition.

Conference Materials

Pre-conference Readings [references]

In preparation for the working conference, all attendees were asked to read the articles listed below to provide a common foundation from which to “build on what is known” about educational scholarship. Prior to reading the articles, we advised all participants to read the annotated summaries of these articles to frame their detailed reading of the primary reading-list articles within a broader context.

Preparatory Reading Summaries

(Prepared by Janet Hafler, Ph.D.)

Primary Readings

1. Hafler JP, Blanco MA, Fincher RM, Lovejoy FH, Morzinski J. Educational Scholarship. Chapter 14. In: Fincher RM (Ed). *Guidebook for Clerkship Directors*, 3rd edition. Alliance for Clinical Education. <http://familymed.uthscsa.edu/ACE/guidebook.htm>

The authors emphasize that, since the Carnegie Foundation’s and Boyer’s work, the educational contributions of clerkship directors and other clinician educators are increasingly being recognized and rewarded in medical education. Boyer’s landmark publication helped educators organize their work within a new framework he labeled “scholarship.” In this chapter, the authors provide a practical understanding of the scholarship of education so that they can benefit and advance based on their work as scholars. The daily activities of clerkship directors, such as teaching, mentoring, curriculum development, or educational leadership, are now recognized as scholarship under certain circumstances.

The authors first provide an overview of educational scholarship and then describe an archetypical case to illustrate the main concepts and guide clerkship directors’ practical understanding of the scholarship of education. Subsequent sections provide information on how to move an educational activity into a scholarly activity and then into scholarship. Specific delineations between scholarly

work and scholarship are covered next, followed by a dialogue on how one’s work can be evaluated. The authors finish with a discussion about support systems at the institutional and department levels.

2. Rice RE. Scholarship Reconsidered: History and Context. Chapter 1. In: O’Meara K, Rice RE. *Faculty Priorities Reconsidered: Rewarding Multiple Forms of Scholarship*. San Francisco: Jossey-Bass 2005. Pp. 17–31.

Rice highlights that *Scholarship Reconsidered* became a significant document because it came at the right time and addressed the main strains developed around central issues of faculty scholarly work that should be valued and rewarded. The primary goal of the report was to extend the debate across higher education, create new conceptions of faculty work in a way that would reintegrate personal and institutional priorities, and bring a new kind of wholeness to what it means to be a scholar while responding more adequately to the shifting educational needs of society. Rice describes the changing context and external events that affected the way we think about scholarship. He argues that, while most higher education reforms begin on the margins of the institution, *Scholarship Reconsidered* targeted the center of the academic enterprise by beginning with the faculty role and questioning the meaning of scholarship and the academic reward system. Rice points out the influence of Boyer’s charismatic and positional authority and that of the American Association for Higher Education and the Carnegie Foundation that supported the report and extended its impact. The author describes the debate generated around “scholarship of teaching,” including the move toward adopting the more inclusive “scholarship of teaching and learning,” as well as the distinctions among good teaching, scholarly teaching, the scholarship of teaching and, most recently, “the scholarship of engagement.”

3. Huber MT, Hutchings P, Shulman, LS. The Scholarship of Teaching and Learning Today. Chapter 2. In: O’Meara K, Rice RE. *Faculty Priorities Reconsidered: Rewarding Multiple Forms of Scholarship*. San Francisco: Jossey-Bass 2005. Pp. 34–38.

Huber et al. review the emergent interest worldwide in the scholarship of teaching and learning—a movement, which, in turn, has promoted its critique and development. Where the debate on its placement continues in today’s academy, the authors conclude that, “genres, topics, and methods [of the scholarship of teaching and learning] are being invented as we speak.” They emphasize that the lack of boundaries welcomes intellectual exchange and collaboration across countries, institutions, and fields, which conveys the best chances for the future scholarship of teaching.

The authors argue that Boyer’s introduction of the scholarship of teaching in 1990 positioned teaching within a broader vision of scholarship, and discussion on scholarship of teaching entered and helped shape the continuous debate about higher education. The authors describe related developments that helped enhance the scholarship of teaching and learning, and how, at the same time, the boundaries of the scholarship of teaching became less clear. They argue that, though issues cut across all fields, the scholarship of teaching is differently shaped across disciplines: distinctive elements of discovery, integration, and application within the scholarship of teaching are there to be discovered. By the end of the decade, two of the authors proposed a new distinction among excellent teaching: scholarly teaching and the scholarship of teaching. A new and emergent field, scholars of teaching and learning must be prepared to make a strong case to receive support and acceptance of their work.

Additional Reading as Time Allows

4. Fincher RE, Simpson DE, Mennin SP, Rosenfeld GC, Rothman A, McGrew MC, Hansen PA, Mazmanian PE, Turnbull JM. Scholarship in Teaching: An Imperative for the 21st Century. *Acad Med* 2000;75:887–894

The authors address scholarship in education, focusing on teaching and other learning-related activities rather than on educational research, by building on Boyer’s work. They apply Glassick et al.’s criteria for assessing faculty members’ educa-

tional activities to establish a basis for recognition and reward of faculty scholarly work, one that is consistent with those given for other forms of scholarship. The authors outline the organizational infrastructure needed to support scholars in education. They maintain that faculty who meet the following criteria are scholars and should be recognized by promotion: creative teaching with rigorously substantiated effectiveness, demonstrated educational leadership, and the use of educational methods that advance learners’ knowledge—all of which are consistent with the traditional definition of scholarship.

5. Simpson D, Hafler JP, Brown D, Wilkerson L. Documentation Systems for Educators Seeking Academic Promotion in U.S. Medical Schools. *Acad Med* 2004;79(8):783–790

The authors conducted a two-phase qualitative study to explore the state and use of teaching portfolios in promotion and tenure in U.S. medical schools. The first phase assessed the diffusion of teaching portfolio-like systems in U.S. medical schools through a Web-based search. The second phase explored the current use of teaching portfolios in 16 U.S. medical schools reporting their use in a previous study. Among the main findings: (a) 76 medical schools have Web-based access to information on documentation of educational activities for promotion; (b) all 16 medical schools continued to use a portfolio-like system; (c) honors/awards and philosophy/personal statements regarding education were included as documentation categories by six more schools than previously surveyed; (d) dissemination of work to colleagues had become a key inclusion at 15 of the 16 schools; (e) the most common type of evidence used was the learner and/or peer ratings, with a reported infrequent use of outcome measure and internal/external review. The authors conclude that the number of medical schools whose promotion packets include portfolio-like documentation had increased by more than 400 percent in over 10 years, and, though the types of documentation categories had increased, students’ ratings of teaching are still the primary evidence used to document the quality or outcomes of the educational efforts reported.

Conference Materials

Illustrative Portfolios to Trigger Discussion

Susan Masters, Ph.D. **Teaching Portfolio**

Background and Educational Philosophy

My primary role at the University of California, San Francisco, is as an educator of medical students. For professional students, pharmacology offers many opportunities for integration of the basic and clinical science presented elsewhere in the curriculum, including the demonstration of exciting “bench-to-bedside” success stories. One of my teaching goals is to reinforce the knowledge of cell biology, physiology, and pathophysiology that students have learned previously. While this sounds simple, determining the content of preceding and concurrent curriculum requires laborious investigative work. To accomplish this, I communicate with other course directors, read syllabi, and attend lectures in other courses.

Currently, most of my time is devoted to the Essential Core preclinical medical curriculum, which consists of nine integrated block courses. I direct one block, oversee portions of the pharmacology content of other blocks, and chair an Essential Core oversight committee. Co-directorship of the new integrated blocks is a formidable task. It requires coordinating many faculty members, most of whom are outside one’s primary department, and careful attention to a myriad of administrative details, including oversight of syllabus and examination preparation, room scheduling, the electronic curriculum, small-group logistics, and teaching evaluations. While the administrative challenges of directing these new blocks are great, the work is exciting and rewarding because it provides opportunities to work closely with talented colleagues devoted to the curriculum’s success.

In addition to teaching, I oversee my department’s professional teaching program. I assign and track the teaching hours for the department faculty and assist the other course directors. I help new faculty members prepare lectures and distribute information on new drugs and therapeutic advances to help them update their teaching materials.

Educational Administration and Leadership

Course Directorship

IDS 101: Prologue

Prologue is the first block taken by entering medical students. It includes basics in the disciplines of gross anatomy, histology, pathology, cell biology, pharmacology, medical genetics, culture, and behavior. It is anchored by a clinical case presented by the emergency department at San Francisco General Hospital. The seven-week course is cosponsored by the departments of cellular and molecular pharmacology and anatomy. I served with Dr. Douglas Schmucker as course co-directors in fall 2002 and 2003. In fall 2004, I served a major “behind the scenes” role in mentoring Dr. Marieke Kruidering-Hall, the new course director, and organizing the block exams.

Pharmacology 100 A/B/C

The Pharmacology 100 A/B/C series was required for second-year medical students until spring 2002; it contained 83 hours of lecture and 9 hours of small groups, and involved about 20 lecturers and 30 small-group instructors. As course director, I recruited and scheduled lecturers, edited syllabi and examinations, corrected essay examination questions, attended lectures, held weekly office hours, and, prior to examinations, led review sessions. In addition, I orchestrated and recruited faculty leaders for several small-group conferences.

Results of Student Evaluations of Pharmacology 100A, B, and C (Best is 5):

Overall Quality of the Course	100A Rating	100B Rating	100C Rating
1996–1997	4.6	NA	4.8
1997–1998	4.6	4.0	4.3
1998–1999	4.6	4.5	4.6
1999–2000	4.7	4.5	4.6
2000–2001	4.4	4.2	4.6
2001–2002	4.3	NA	4.5

Curriculum Leadership
Administrative Tools

I developed tools that have been adopted by other blocks in the Essential Core. These include instructions and templates for preparing syllabus chapters, tips for writing multiple-choice examination questions, course information statements, and Microsoft® Excel tools for tracking grades and attendance. I wrote a set of Excel programs used by Dr. Mary Banach in the Office of Medical Education Research and Development to analyze exam data and track student performance across the curriculum. Dr. Marieke Kruidering-Hall and I created a set of styles and guidelines for syllabus preparation in Adobe® InDesign. I have also consulted on the design of Ilios, the university's curriculum database.

Learner Assessment

I lead a project to improve Essential Core block exams and the feedback on academic performance that we provide students. The first phase of the project involved making exams secure so questions could be reused, and constructing a standardized template for designing exam questions that includes

- Instructor name
- Session title
- Explanation for the correct answer
- Discipline(s) under which the question falls
- Session objective(s) under which the question falls

- Once an exam is given, statistics on student performance (percentage of all students who answered correctly), answers selected by all students and also by students in the top and bottom quartiles, point biserial (a statistic that estimates the ability of a question to discriminate between students who do well or poorly overall on the exam).

This standardization of exam question preparation has had a remarkable effect on moving instructors toward writing questions to match their session objectives!

I used Microsoft® Excel, Microsoft® Word, and Filemaker® Pro to create the software tools needed for this project. I worked closely with the Essential Core block directors to standardize exam preparation and the means of reporting exam results to students. The goal of the project was to create fair, well-tested exams that reflect course learning objectives.

With disciplines attached to every exam question, we are able to track student performance across the entire Essential Core. We chose 17 subjects roughly based on disciplines reported for the United States Medical Licensing Exam (USMLE) I and the way in which popular USMLE I board review books are structured. After each Essential Core exam, we generate a score for every student in all 17 subjects represented on the exam. We combine exam scores in the 17 subjects as students move through the blocks. At the end of each block, we release to students their raw and percentage score in each subject. We also publish the number of total points,

class average, and class standard deviation in each subject so students know where they stand with respect to their peers. This subject tracking is especially important for subjects, such as pathology, pharmacology, and genetics, spread across multiple blocks. The hope is that students will use the information to gauge their strengths and weakness in

these subjects and appropriately seek help and also focus their preparation for USMLE step I. At some point, we may require remediation for students who fall below 70 percent in a subject. The tracking process incidentally yields information about the relative degree of difficulty of the various subjects and the number of questions asked for each.

Standing Committees

Committee/Role	Overview of Committee Activities
Essential Core Course Committee (ECCC) Member, 2002–present Chair, fall 2004–present	This committee meets monthly to discuss issues that affect multiple EC blocks and to share results of curricular and administrative innovations. I work closely with Dr. Helen Loeser, associate dean for academic affairs, and Dr. Ramu Nagappan, curriculum coordinator, on the steering of this committee.
EC Steering Committee Ex-Officio member 2004–present	This committee meets monthly to set policy for Essential Core courses. Dr. Manny Pardo, the chair of this committee, and Drs. Loeser and Nagappan and I work together to balance the work of this committee and its sister, the ECCC committee.
Committee for Curriculum and Educational Policy (CCEP) Ex-Officio member, 2004–present, 1999–2001,	Parent committee for the medical curriculum. It sets policy and reviews curricular progress. I update CCEP on ECCC progress.
School of Medicine Admissions Committee Member, 1997–2000, 2004–2005	This committee selects the incoming medical student class. I rejoined this committee and served on Panel 2, which is run by Dr. Leslie Zimmerman.

[Editor's note: Five additional committee/roles presented in actual portfolio.]

Ad Hoc Committees

Committee/Role	Overview of Committee Activities
The Exam Data Banking Working Group Chair, spring and summer 2004	This subcommittee of the ECCC worked on a plan to make EC block exams secure (i.e., not release them to students), designed a database to house exam questions and made plans to improve self-assessments. Key members included Drs. Wade Smith and Manny Pardo.
The Faculty–Administrator Support Working Group Chair, spring and summer 2004	This subcommittee of the ECCC explored means of reducing the stressful heavy administrative load on EC directors and administrators. Several initiatives developed by this group have been adopted. Key members included Dr. Helen Loeser, Dr. Katherine Hyland, Dr. Tracy Fulton, Lloyd French, and Cindy Irvine.

[Editor's note: Four additional ad hoc committees presented in actual portfolio.]

Educational Scholarship and Creation of Enduring Materials

Books and Book Chapters

1. AJ Trevor, BG Katzung, SB Masters: Pharmacology: Examination and Board Review, Seventh Edition, Lange Medical Books/McGraw-Hill, New York, 2004.
2. SB Masters: Agents Used in Anemias; Hematopoietic Growth Factors. In Basic and Clinical Pharmacology, Ninth Edition, BG Katzung (ed), Lange Medical Books/McGraw-Hill, New York, 2004.
3. SB Masters: The Alcohols. In Basic and Clinical Pharmacology, Ninth Edition, BG Katzung (ed), Lange Medical Books/McGraw-Hill, New York, 2004.
4. AJ Trevor, BG Katzung, SB Masters: Pharmacology: Examination and Board Review, Sixth Edition, Lange Medical Books/McGraw-Hill, New York, 2002.
5. DV Santi and SB Masters: Agents Used in Anemias; Hematopoietic Growth Factors In Basic and Clinical Pharmacology, Eighth Edition, BG Katzung (ed), Lange Medical Books/McGraw-Hill, New York, 2001.
6. SB Masters: The Alcohols. In Basic and Clinical Pharmacology, Eighth Edition, BG Katzung (ed), Lange Medical Books/McGraw-Hill, New York, 2001.
7. SB Masters and NM Lee: The Alcohols. In Basic and Clinical Pharmacology, Seventh Edition, BG Katzung (ed), Appleton & Lange, Norwalk, Connecticut, 1998.

Direct Teaching

University of California, San Francisco Teaching Awards and Honors:

2005	Commitment to Teaching Award, Class of 2007
2003	Academic Senate Distinction in Teaching Award
2003	Outstanding Life Cycle Educator, School of Medicine, Class of 2005
2002	Pre-Clinical Faculty Teaching Award, School of Medicine, Class of 2002
2002	Kaiser Award for Excellence in Basic Science Teaching, School of Medicine
2001	Elected to the Haile T. Debas Academy of Medical Educators
2000	Long Award for Excellence in Teaching, School of Pharmacy, Class of 2001
2000	Long Prize for Excellence in Teaching, School of Pharmacy, Class of 2000
1999	Long Award for Excellence in Teaching, School of Pharmacy, Class of 2000
1999	A Major Contribution to Teaching Award, School of Medicine, Class of 2001
1997	Long Prize for Excellence in Teaching of the Basic Sciences, School of Pharmacy, Class of 1997
1997	Outstanding Lecture Series, School of Medicine, Class of 1999

Direct Undergraduate Teaching (no student evaluations available):

1999–present	USMLE Step I pharmacology review sessions for medical students, University of California, San Francisco (2 hours/year). In these sessions, I use a Jeopardy-style format to guide the students through the major CNS drug groups in a large-group setting. I use many of the same images used in previous pharmacology lectures to provide a direct link to their previous learning. I find that a question-and-answer format is much more engaging than the common strategy of racing through overhead after overhead of facts. I also show the students how to consider topics from a question-writer’s perspective—what information would students choose as topics for questions? This hopefully helps them focus their subsequent study of the topic.
1995–2003	Lecturer, Joint Medical Program Medical Pharmacology, University of California, Berkeley (~ 5 hours of lecture/year)

Teaching Skills Programs and Workshops

Workshop Leader	<p>Winter and Spring 2005, Being an Observer in the Academy of Medical Educator Teaching Observation Program (TOP)</p> <p>Spring 2005, Lecturing Skills, Professional and Academic Skills (PASS) program for postdoctoral fellows</p> <p>Summer 2004, Lecturing Skills, Preparing Future Faculty (PFF) program for postdoctoral fellows</p>
University of California, San Francisco, Academy of Medical Education Workshop: Giving a Dynamic Lecture April 18, 2005	At the invitation of Dr. Manny Pardo, I created and presented a workshop on designing and delivering effective lectures.
Postdoctoral Teaching Fellowship 2001–present	With Dr. Kruidering-Hall from my department and Drs. Tracy Fulton and Katharine Hyland from biochemistry and biophysics, I helped create a program that provides postdoctoral fellows (postdocs) instruction and experience in small-group teaching. Each year, we interview 10–20 applicants and select 5–10 from the group. The selected postdocs lead small groups and assist with exam grading either in IDS 101: Prologue or IDS 103: Cancer. We provide postdocs with instruction on leading small groups and also give them feedback after observing them in the small-group setting. The feedback from participants has been highly favorable.
Grand Slam Presentations Workshop University of California, San Francisco, Department of Psychiatry Education Retreat June 7, 2003	At the invitation of Dr. Lowell Tong, I created and presented a workshop on designing and delivering effective lectures.

[Editor’s note: Actual portfolio included longitudinal evaluation data from multiple courses and student comments from two courses’ teaching evaluations.]

Student Evaluation of Teaching Performance in Required University of California, San Francisco, Courses: Numerical Results

Evaluations ask students to rate the educator on a 1–5 scale with:

1 = Poor; 2 = Fair; 3 = Good 4 = Very good; 5 = Excellent

IDS 101: Prologue

Fall 2004; 4 hours lecture, 2 hours small group				
Question	N	Leader Mean	Leader Std	Course Mean
Facilitator's level of preparation		4.77	0.6	4.32
Ability to facilitate without dominating the discussion		4.15	0.8	4.08
Overall assessment of the facilitator's teaching effectiveness		4.23	0.73	4.14
Question	N	Lecturer Mean	Lecturer Std	Course Mean
Rate the quality of the lecturer's syllabus section	38	4.24	0.71	4.02
Rate the lecturer's availability outside of class	22	4.23	1.15	4.53
Rate the lecturer's enthusiasm	37	4.68	0.67	4.46
Rate the lecturers' ability to teach to the students' level of understanding	38	4.37	1.00	4.32
Rate the lecturer's use of audiovisuals	38	4.08	0.94	4.14
Rate the overall effectiveness of the lecturer	38	4.34	0.85	4.29
Fall 2003; 5 hours of lecture				
Question	N	Lecturer Mean	Lecturer Std	Course Mean
Rate the quality of the lecturer's syllabus section	39	4.00	0.94	4.03
Rate the lecturer's availability outside of class	25	4.32	0.99	4.11
Rate the lecturer's enthusiasm	39	4.13	0.83	4.36
Rate the lecturers' ability to teach to the students' level of understanding	37	4.35	0.95	4.37
Rate the lecturer's use of audiovisuals	37	3.78	0.98	3.90
Rate the overall effectiveness of the lecturer	39	4.00	0.97	4.02

Advising and Mentoring

Faculty

Name/Department	Dates	Description
[Student Name] Ph.D. Department of Biochemistry and Biophysics	2000–present	Dr. [name] teaches molecular biology and biochemistry. She currently directs several professional school courses and gives many lectures. I mentor Dr. [name] in various areas of teaching.
[Student Name], Ph.D. Department of Cellular and Molecular Pharmacology	2002–present	Dr. [name] was hired to help our department teach professional students. She currently directs several courses and gives a number of lectures in all the professional schools. I have a major role in mentoring [name].
[Student Name], Ph.D. Department of Biochemistry and Biophysics	2002–present	Dr. [name] teaches molecular biology and coordinated the medical genetics teaching. She currently directs several professional school courses and gives many lectures. I mentor Dr. [name] in various areas of teaching.

Medical Students

Name and Graduation Date	Description
Supervised independent study, spring and summer 2005 for '07 students [3 Student Names] for '06 students [6 Student Names]	These students needed help preparing for USMLE Step I. I meet with students every other week to offer encouragement, review progress, and answer pharmacology questions. Students were required to formulate a study plan and report their scores on practice tests.
[Student Name] '06	Advisor for a project to design a set of first ILMs (FILM) for incoming MSI students and a distribution system via iROCKET that is being led by [name].
[Student Name] '08	Advisor on student's Summer Curriculum Ambassador work on a drug database for the IDS102: Major Organs Systems block.
[Student Name] '06	Student worked as Student Ambassador in Summer '02. I supervised her creation of "How to Use Semi-Log Paper" PowerPoint program for IDS 101: Prologue. She has recently begun a year-long Curriculum Ambassadorship and will be working with me on several Life Cycle projects.

[Editor's note: List continues with nine additional students from 2003 to present.]

Karen Wendelberger-Marcidante, M.D. Educator's Portfolio

Evidence Of Educational Leadership

"Leaders motivate people and facilitate the development of projects toward achievement of goals."

Associate Dean For Curriculum^B

Problem: Lack of integration across the four years of medical school, need for specific objectives to help continue curricular development.

Project: Medical School Curricular Retreats

Goal: To establish specific unified objectives for each year, looking to integrate across years.

Role: Facilitator, Convener

Retreat Outcomes:

- M1 + M2 Objectives
- M3 Global Objectives + M3 Diagnosis/Assessment/Procedure (DAP) Objectives
- M4 Objectives
- Working Groups developed 4 longitudinal curricula
 - Communication curricular objectives
 - Managed care curricular objectives
 - Genetics curricular objectives
 - Geriatrics curricular objectives

- M3 Clerkship Evaluation Form
 - Required for use in all M3 clerkships
 - Faculty rate student performance on each of the 10 M3 Global Objectives (e.g., communication with patients and families, history, physical examination, medical program solving, professional behavior).
 - Nine-point scale divided into three subclusters (below standards, at standards, above standards) includes behavioral descriptors associated with each objective
 - ◆ Reliability (internal consistency) Cronbach alpha = 0.965 (N=530)
- M4 Clinical Rotation Evaluation Form
 - Behaviorally anchored rating scale developed, pilot to occur in spring 2000.
- Application/receipt of four Learning Resources related grants 1995–1998* (MCW): \$56,750
 - 1995: Co-Investigator – “Reassessing the M3 Year Curriculum: Matching actions to goals” \$6,000.
 - ◆ 1997 Co-Recipient MCW Learning Resources Innovative Educational Project Award – selected by Executive Committee – Curriculum and Evaluation Committee

[Editor's note: All grants listed in actual portfolio.]

^B Note: At this candidate's medical school, the Educator's Portfolio is submitted as part of the promotion packet to highlight/provide evidence of educational excellence. This Portfolio was submitted in 1999 as part of packet for promotion to rank of professor.

* Awarded following peer review by CEC Executive Committee.

Dissemination:

- M3 Global and DAP Objectives distributed to all M3 students; M4 Objectives distributed to all M4 students
- Genetics objectives used for successful grant proposal (HRSA Genetics in Primary Care)
- Geriatrics objectives used for successful grant proposal (AAMC/Hartford Foundation) and pending proposal (Reynolds Foundation)
- Two national presentations (one on method, one on content)
- One peer-reviewed publication

[Editor's note: Publications and Presentations listed in actual portfolio; Structure of Goal, Role, Outcomes, Dissemination used to present seven additional projects.]

Vice Chair, Department Of Pediatrics

Project: RRC Accreditation

Role: Administratively responsible for assuring completion of paperwork for residencies (Pediatrics and Medicine/Pediatrics) and all fellowships.

Outcomes: Five-year accreditation for all programs with minimal requests for response. No major concerns.

Project: Performance-based Assessment Program

Role: Co-creator, evaluator

Outcomes: Enhanced satisfaction of students (clerkship evaluations)

Development from use for teaching to use for evaluation

Identification of specific areas requiring improved teaching strategies

Dissemination: Two national peer-reviewed posters

[Editor's note: Additional leadership roles and associated projects listed in actual portfolio.]

Educator Activity Category Format and Illustrative Examples Demonstrating Evidence for Quantity, Quality, and Engagement with the Educational Community

Teaching

Educator's Portfolio Format

1. Description of role (with reflective critique)
2. Narrative or tabular display of who, what, when, where, how much, how many
 - Easy-to-read summary
3. Evidence of quantity and quality
 - Narrative or tabular summary of student evaluations and, if available, peer evaluations, including, if possible, change over time and normative data
 - Short excerpts from supporting letters (complete letters should be in appendix or included with letters of recommendation for promotion)
 - Invitations to teach outside department or school
 - Repeat invitations to teach to the same group or in the same course
4. Evidence of engagement with the community of educators
 - Teaching awards, including the criteria for judgment by peers
 - Invited presentations (e.g., workshop, discussion group) related to teaching expertise focused on teaching method or effective teaching strategies
 - Peer review of teaching and/or instructional material
 - Cite where and how peer reviewed
 - Samples/examples of materials (or excerpts, summary)
 - Public dissemination and impact/use
 - Reference presentation in a peer-reviewed or invited forum at regional/national meeting
 - Cite how product was disseminated
 - Indicate adoption/adaptation of teaching strategy, method, or instructional materials by others (e.g., citation in publications)
 - Indicate inclusion in a national repository (data re: number of “hits,” adoptions)

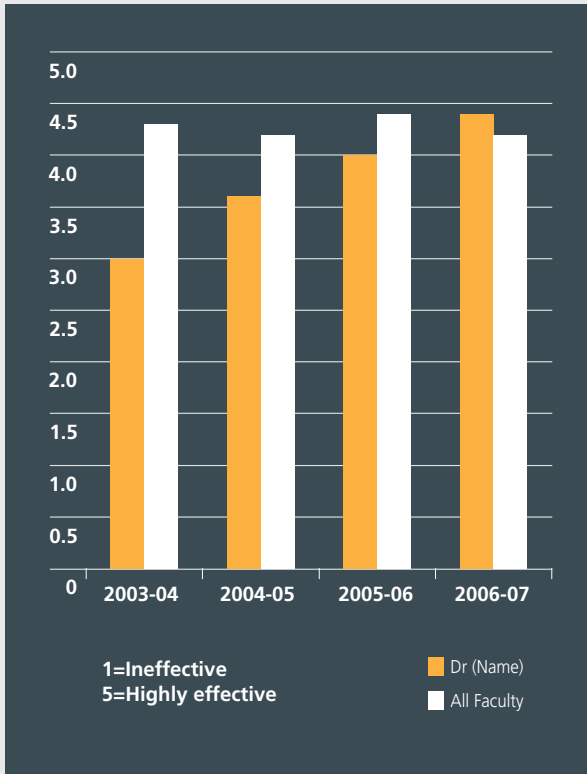
Educator's Portfolio Documentation Examples

Evidence of Quantity and Quality

Teaching Activity/Role	Year	Quantity	# Learners	Quality
<small>* Additional details available in appendix</small>				
Seminar Leader (Medical students)				
Family Medicine Clerkship	1997–present	~ 19 hrs/yr	8–12/yr	For 2004–2005, mean rating, “Was an effective seminar leader” = 5.41 on a 7-point scale (n=181 ratings)*

*Comparative ratings for each year should be given and compared to peer group if possible.

Student Evaluations: Individual Faculty Teaching Ratings by Year, “Overall Effectiveness as a Teacher”



Evidence of Engagement with the Educational Community

Instructional Material: Interactive diagnostic decision-making cases: cough, chest pain, abdominal pain

My role: Co-developer of three clinical cases, designed to help students develop clinical problem-solving skills

Peer review: To date, 500 people have accessed our Web site. Feedback regarding the materials and use is requested. At least 10 schools report adopting or adapting one or more of the cases. Representative comments from reporting schools include

- “These cases are very realistic, and we have adopted them for use in our required clerkship in Medicine to supplement ‘real’ patient cases.”
- “The evidence for diagnostic and therapeutic decisions is documented using current literature, emphasizing the importance of evidence-based decision making.”

The cases have not been formally peer reviewed for inclusion in a national repository.

Curriculum Development

Educator's Portfolio Format

1. Name and educational activity
2. Role / contributions (consultants / collaborators)
3. Context (need, the change, description)
4. Demonstrate meet criteria of value to institution and scholarship
 - Clear goals
 - Appropriate methods
 - Effective presentation
 - Adequate preparation
 - Significant results
 - Reflective critique
5. Dissemination
6. Revenue (including grants)

Educator's Portfolio Documentation Examples

Title:

Evidence-based Medicine (EBM) course
(First-year students)

Roles:

Course Director

- Responsible for organizing instruction for five-credit course that includes lectures and individual exercises
 - Recruit and train small-group leaders
 - Oversee case development (with others)
 - Develop objectives to introduce basic concepts of EBM and help students apply concepts while reading articles for small-group discussion sessions
- Collaborators: Statisticians in beginning, three clinicians currently

Clear Goals:

Create a new EBM course for all first-year students that students perceive as clinically relevant. The predecessor course consistently received “very poor student evaluations” and EBM content was “lacking in the curriculum.”

Adequate Preparation:

- Review of “best practices”: McMaster’s curriculum, NBME test content
- Ph.D. in public health

Appropriate Methods:

- Multi-method approach including interactive lecture series, real-time clinical vignettes, abstract critique followed by article critique
- Increased collaborative teaching as all small groups now co-led by basic scientist and physician
- Assessment methods: test questions are application (not rote memorization), checklist evaluation

Significant Results (Outcomes):

- Improved evaluation of didactic series—from markedly below institutional year average to average
- AAMC graduate survey—from inadequate exposure to appropriate/excessive
- NBME performance from below to above average
- Improved OSCE performance on ambulatory practice module
- Developed fourth-year integrative selective with basic scientists from targeted courses and other clerkship directors.

Effective Presentation (Dissemination):

- Results presented to curriculum committee
- Internal review in progress with comparative data over last two years
- Content replicated in another clerkship and replication in selected residencies planned

Next Steps for Continuing Improvement:

- Developing electronic form to assist schools that don't have critical mass of faculty/learners
- Submit to AAMC MedEdPORTAL

Advising and Mentoring**Educator's Portfolio Format**

Name	Type and Trainee Level	Purpose	Process	Current Status	Outcome(s)	Documentation
of individual	Advisor or mentor relationship	Specific goals of relationship	Dates and description with details of mentoring or advising relationship	of protégé or advisee including positions, academic rank, and related academic achievements	Examples include abstracts, publications, awards, grants, examples of goal attainment, resolution of concern or problem	reference to abstracts, presentations, publications, ongoing collaboration, continued influence, etc.

Educator's Portfolio Example for Advising/Mentoring

Name of Advisee or Protégé	Type/Level	Purpose of Relationship	Duration and Process	Current Status of Protégé	Outcome(s) of Relationship	Documentation of Effectiveness
1. Charles Jason	• Mentor • Medical student	• Development of professional identity • Career guidance in service of minority health care	9/2001–present • 1-on-1 meetings • Edit paper, CV • M1-2 curriculum auditor via PDA • Advocate for LCME liaison position • Link to faculty role models	• Internal medicine resident • M.D. received 2006 • Published essay in Academic Medicine	• Appointment as AAMC Student Liaison to LCME • Maturation as physician matching career choice to values	Thank-you card at M.D. graduation stated: <i>I wanted to thank you for the time you spent with me over the years in making me the young man I am today. I'm not sure if you realize the impact you've had in my life, always believing in me, helping me to question things, and teaching me about life and medical education.</i>
2. Kimberly Marie	• Adviser/ Junior Faculty	• Preparation of academic promotion documents	8/05–12/05 • 1-on-1 + e-mail • Revise/reframe CV and portfolio • Consult with department chair re: letter of rec	• Associate Professor	• Promoted 6/06 to Associate	Professor "Thank you" via e-mail for academic makeover and lunch invitation

Name of Advisee or Protégé	Type/Level	Purpose of Relationship	Duration and Process	Current Status of Protégé	Outcome(s) of Relationship	Documentation of Effectiveness
1. Ronald Albert	• Mentor/ Junior Faculty	• Mentor education research project “Teaching Quality Improvement in the Emergency Department”	9/04–8/06	• Assistant Professor	<ul style="list-style-type: none"> • Received Education Innovation Grant • Published 1 (#6 on CV) • Published 1 manuscript (#4 on CV) 	

Educational Administration and Leadership

Educator’s Portfolio Format

For each educational leadership project/initiative describe each relevant component

1. The project/initiative and inclusive dates of the project
2. Need/problem/opportunity–rationale for change
3. Goal(s)
4. Leadership role and contribution
5. Actions taken and connection to literature and best practices
6. Resources garnered and utilized (human resources, internal budgets, and grants)
7. Evaluation (including external peer review if relevant), outcomes and/or impact
8. Dissemination

Educator’s Portfolio Documentation Example for Leadership

Project: Medical Student Basic Science and Clinical Integration (2003–07)

Need:

Historically, selected basic science courses have been poorly rated by students, in part because of the perceived “lack of relevance” with clinical prac-

tice and poor pedagogy. Students report that in the clinical years, faculty tell them to “ignore” what you learned in a particular course.

Goal:

To increase integration of basic and clinical science across all four years

Preparation (roles):

Clerkship Director, facilitator, author of cases and tutor training manuals, coauthor grant applications.

Acquired resources:

My collaborators’ and my time were covered by the respective departments. The dean’s office provided staff support through an internal instructional innovation grant that I applied for and received.

Methods (actions):

I chaired a small working committee that surveyed the literature, sought best practices from other schools, and developed a four-year content map. We worked with course and clerkship directors to design case-based discussion sessions, wrote the cases and a tutor training manual. I conducted four faculty development workshops on the use of the new materials for 50 faculty members.

Results/Evaluation of course:

The new case-based tutorials were used for the first time in the course in 2004–05. Course ratings improved from 3.4/5.0 (good) prior to the introduction of the tutorials to 4.2/5.0 (very good) after implementation.

	2003-04		2004-05		2005-06	
Scale 1 = Poor 5 = Excellent	Course rating	Average of comparison courses	Course rating	Average of comparison courses	Course rating	Average of comparison courses
Overall quality	3.4	4.0	4.2	4.1	4.3	4.0

Outcomes related to course integration project:

- Improved evaluation pre-post introduction of cases and faculty development workshops for targeted courses compared to nontargeted courses (clinical relevance statistically improved on AAMC Graduation Questionnaire)
- Produced cases and tutor training
- Increased collaboration (all small groups in targeted courses now co-led by basic scientist and physician)
- Developed two collaborative research projects
- Piloted the incorporation of basic science education in clinical clerkships
- Developed fourth-year integrative selectives with basic scientists from targeted courses and other clerkship directors.
- One case workbook. Case book peer reviewed and accepted for AAMC MedEdPORTAL. In the past year, it has received 150 hits with over 20 schools adopting the curriculum.
- Reflective Critique: Based on the student ratings and faculty facilitator evaluations, several changes will be implemented in the next academic year, including more emphasis on student facilitation of small groups, more emphasis on the evidence from literature that underlies decisions, and more faculty development before each small-group session

Presentation (Dissemination):

[Citations listed under each using commonly accepted standards would appear in this section but are omitted for brevity]

- One peer-reviewed journal publication
- Three national peer-reviewed presentations
- Two national/regional peer-reviewed posters
- Two invited presentations

Learner Assessment

Educator's Portfolio Format

1. Context: A brief description of the goal, format, context, and faculty role
2. Quantity of assessment activities
3. Evidence about quality and engagement with the educational community specific to:
 - a) Methods (i.e., adherence to best practices, informed by the literature)
 - b) Evidence about quality of results (i.e., measures of reliability and validity appropriate to the type of assessment)
 - c) Evidence of contribution to the educational community, if applicable, (i.e., dissemination of products, impact, etc)

Educator's Portfolio Documentation Example: Learner Assessment Miller's Pyramid "Does"

(Using Glassick's Criteria to Frame Presentation of Evidence)

Description:

In response to data from the AAMC Graduation Questionnaire that many medical students perceive that faculty rarely observe their clinical skills, I have sought ways to cost effectively expand use of an established tool (ABIM mini-Clinical Evaluation Exercise or Mini-CEX) in multisite medical student clerkships.

Glassick's Criteria	Evidence
Clear Goals	<ul style="list-style-type: none"> To determine the feasibility of implementing a personal digital assistant (PDA)-based Mini-CEX for third-year medical (M3) students.
Adequate Preparation	<ul style="list-style-type: none"> Literature review highlights validity and reliability of Mini-CEX. The literature also provided insights regarding ways to enhance cost-effectiveness of administration procedures. No PDA-based methods for the Mini-CEX were found.
Appropriate Methods	<ul style="list-style-type: none"> Used conventional software development tools for the PDA to create PDA-based Mini-CEX observation/checklist tool.
Significant Results	<ul style="list-style-type: none"> Demonstrated feasibility of a PDA-based Mini-CEX Students and evaluators showed a high degree of satisfaction with the tool (comments available in Appendix X).
Effective Presentation	<ul style="list-style-type: none"> Peer-reviewed platform presentation at national meeting (SGIM 2005). Invited to be a plenary speaker at the annual national meeting of the Clerkship Directors of Internal Medicine (October 21, 2005).
Reflective Critique	<ul style="list-style-type: none"> My successful experience developing the PDA Mini-CEX has motivated me to work to adapt a validated learner assessment form to a PDA-based tool that would facilitate collection and analysis of important data about students' supervision of clinical skills in other venues.

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