

AACP REPORTS

Report of the 2011-2012 Academic Affairs Standing Committee: The Evolving Role of Scholarly Teaching in Teaching Excellence for Current and Future Faculty

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Background and Charges

According to the Bylaws of the American Association of Colleges of Pharmacy (AACP), the Academic Affairs Committee shall consider

“...the intellectual, social, and personal aspects of pharmaceutical education. It is expected to identify practices, procedures, and guidelines that will aid faculties in developing students to their maximum potential. It will also be concerned with curriculum analysis, development, and evaluation beginning with the pre-professional level and extending through professional and graduate education. The Committee shall seek to identify issues and problems affecting the administrative and financial aspects of member institutions. The Academic Affairs Committee shall extend its attention beyond intra-institutional matters of colleges of pharmacy to include interdisciplinary concerns with the communities of higher education and especially with those elements concerned with health education.”

Consistent with identifying practices, procedures and guidelines that will aid faculties in developing students to their maximum potential, President Brian L. Crabtree charged the Committee to: 1) examine and define scholarly teaching and contrast scholarly teaching with the scholarship of teaching and learning (SoTL), and 2) Evaluate and recommend methods for evidence-based assessment of scholarly teaching that schools and colleges can use when assessing faculty's efforts in this element of the academic mission, and 3) recommend specific strategies to equip graduate students, post-docs, and post graduate residents for careers as scholarly teachers. This Committee Report provides an overview of the

process undertaken by the 2011-2012 Academic Affairs Standing Committee and describes the results of the Committee's examination of the evolving role of scholarly teaching in the culture and assessment of teaching excellence for current and future faculty.

Scholarly Teaching

The Committee accomplished its work by first reviewing the scholarship of teaching and learning, scholarly teaching, and teaching excellence literature since the first charge was to contrast scholarly teaching with SoTL.¹⁻¹⁰ The Committee used this literature to guide their brainstorming session to define scholarly teaching and SoTL, which are both related in a continuum yet differ in their intent and products.⁴ Scholarly teaching goes beyond content knowledge and preparing and delivering lecture content to include evidence-based practice and pedagogical knowledge of teaching and motivation best practices.¹⁰ The definition of scholarly teaching also includes the six standards of scholarly work: 1) clear goals, 2) adequate preparation, 3) appropriate methods, 4) significant results, 5) effective presentation, and 6) reflective critique.^{2,6} The Committee placed high value on these 6 qualitative standards since they can be foundational for evidence-based assessment of scholarly teaching. While scholarly teaching fosters student learning it is not scholarship.⁵ SoTL builds on the process of scholarly teaching to include making teaching strategies and learning outcomes peer-reviewed and publicly disseminated so others can comment and build upon those efforts.^{3,5,10} Some have noted that all teachers should strive to become

excellent, but not all may be scholarly⁵, however, our Committee disagrees with this statement because of the changing program accreditation and financial climate of academia. We attest that as a minimum expectation, all faculty should strive to be and held accountable as scholarly teachers.

Policy Statement. All pharmacy faculty have the responsibility to practice as scholarly teachers. Scholarly teaching is achieved when faculty use a documented evidence-based approach to deliver their discipline-specific content knowledge as well as their pedagogical knowledge of teaching and motivation.

The Committee structured the Report around the 6 standards of scholarly work. Table 1 takes these 6 standards and applies them to scholarly teaching and lists the scholarly teaching foundation core, artifacts/evidence of these cores, documentation strategies, who would assess these and suggested assessment tools. The Report concludes with preparation strategies for preparing future faculty and recommendations to the Association.

The Need for Scholarly Teachers

The time for renewed and increased emphasis on scholarly teaching is now! The concept of scholarly teaching is not new and while some institutions hold faculty accountable as scholarly teachers, wide-spread adoption of the standard is inconsistent.⁸ The changing climate in higher education makes support for this expectation timely for two main reasons. First, changing accreditation requirements prescribed by the U.S. Department of Education, as seen in ACPE Standards 2007 Curriculum Standards 9-15, reveal that faculty are accountable for developing, delivery and improving the didactic and experiential curricula using active learning methods and assessments that are valid and reliable indicators of student learning knowledge, skill and attitude outcomes.¹¹ This increased accountability in accreditation standards demonstrates the need for faculty to possess the content and pedagogical knowledge and evidence-based practices defined for scholarly teachers. Second, federal legislators have called for increased accountability and frugality in federal funding for higher education.¹² Many states have responded to the economic downturn by planning to or implementing substantial changes in formulas for funding state higher education institutions that are based on student performance.¹³ In Missouri, for instance, the state plans to implement a system whereby baseline funding is provided to institutions, but any additional funds will be distributed based upon measures of student success such as freshman to sophomore retention rates, degrees awarded, graduation rates, and quality measures such as performance on nationally normed examinations.

The increased focus on state funding based on student performance coupled with decreased funding rates on federal grant proposals demonstrate the financial need for our colleges and schools of pharmacy faculty to demonstrate their ability as scholarly teachers who can use evidence-based teaching methods to promote student success.

Documenting and Assessing Scholarly Teaching

These two changes support the need for all faculty to be, and held accountable, as scholarly teachers. Achieving this outcome requires a unified cultural shift in the academy for standardization in documenting, assessing, rewarding, and ultimately valuing scholarly teaching. Starting with the end in mind, a cultural shift about the value of teaching needs to occur within the Academy and this is an opportune time for change. For over 120 years, universities in the United States have valued the scientific method and the scholarship of discovery and have rewarded faculty research productivity with promotion, tenure, and salary increases.¹⁴ Part of this value may stem from the ease in quantifying and measuring research productivity, such as number of publication in peer-reviewed journals, impact factors, dollar amounts, types and number of grants, and indirect cost recovery and salary savings. In contrast, the value of teaching has been commonly quantified by the number of lectures taught, courses coordinated, students supervised, and scores on course evaluations, but these measures alone do not equate to teaching effectiveness or scholarly teaching. Therefore, if the value of teaching is to be elevated, the evidence that faculty produce to demonstrate their effectiveness and the evaluation of that evidence needs to change. If not already in place, institutions need to use structured and psychometrically sound metrics to measure faculty productivity in scholarly teaching that goes beyond time spent teaching. These metrics should be used to develop and inform a meaningful reward system, including but not limited to promotion, tenure, salary increases, financial rewards, and teaching awards.¹⁴ Recognizing and rewarding scholarly teaching is essential if institutions are to fulfill their education mission optimally and increase the value placed on teaching.⁵ Achieving the cultural shift that effective teachers approach their teaching in similar ways that scientists approach their research, requires 3 essential components: 1) requiring faculty to document their training in educational methods and pedagogy such as completion of a core scholarly teaching foundation certificate program; 2) asking faculty to demonstrate the outcomes of their scholarly teaching; and 3) holding faculty accountable and measuring their ability to demonstrate scholarly teaching by using meaningful, systematic, and evidence-based assessments. While these 3 components

Table 1. Six Standards of Scholarly Teaching

Standard	Scholarly Teaching Foundation Core	Artifact/Evidence	Documentation Strategy	Assessor	Assessment Tool (see Appendices 1-7 for example rubrics)	
Standard 1 - Clear Goals	Writes effective learning objectives	Examples of course, lecture, lab, rotation objectives	Teaching Philosophy	Chair	Clear goals rubric	
			Teaching Portfolio	Peers		
Standard 2 - Adequate Preparation	Uses objectives in teaching	Objectives workshop attendance	Annual Report	Educational Specialists	Clear goals rubric	
			Course Syllabi			
			Lecture Handout			
			Teaching Portfolio	Chair		
			Annual Report			
			Teaching Philosophy	Chair		Longitudinal review of course evaluations on student perceptions of objectives utility
			Teaching Portfolio	Peers		
			Annual Report	Educational Specialists		Adequate preparation rubric
			Course Evaluation Table	Students		
			Teaching Philosophy	Chair		Adequate preparation rubric
Teaching Portfolio	Peers					
Annual Report	Educational Specialists	Course evaluations or peer review (summary of #s and comments)				
Course Syllabi	Peers					
Lecture Handout	Educational Specialists	documenting ability to adapt material to students				
Teaching Philosophy	Chair					
Teaching Portfolio	Peers	Adequate preparation rubric				
Annual Report	Students					
Course Evaluations	Educational Specialists	Adequate preparation rubric				
	Summarizes how course or content fits into curriculum	Student characteristics workshop attendance Diagram/Curriculum Map of how their course, lecture, lab, rotation fits into curriculum	Teaching Philosophy	Chair	Adequate preparation rubric	
			Annual Report			
			Teaching Portfolio	Chair		
			Annual Report	Peers		
				Educational Specialists		Adequate preparation rubric
				Curriculum Committee		
						Adequate preparation rubric
						Adequate preparation rubric
	Demonstrates how to use technology or other resources to facilitate student learning	Reference list of evidence (scholarly literature) of best practices for using technology in the discipline	Teaching Philosophy	Chair	Adequate preparation rubric	
			Teaching Portfolio	Peers		
			Annual Report	Educational Specialists		
			Course Syllabi	Educational Specialists		
			Lecture Handout			

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Table 1. (Continued)

Standard	Scholarly Teaching Foundation Core	Artifact/Evidence	Documentation Strategy	Assessor	Assessment Tool (see Appendices 1-7 for example rubrics)
Standard 3 – Appropriate Methods	Comprehends pedagogy; Articulates best teaching methods (best practices) for teaching given content	Lists technology used to facilitate learning	Teaching Philosophy Teaching Portfolio Annual Report Course Evaluations	Chair Peers Educational Specialists Curriculum Committee Students	Adequate preparation rubric Course evaluations or peer review (summary of #s and comments) documenting ability to use technology to facilitate learning Adequate preparation rubric
		Technology workshop attendance	Teaching Philosophy Annual Report	Chair	Adequate preparation rubric
Standard 3 – Appropriate Methods	Comprehends pedagogy; Articulates best teaching methods (best practices) for teaching given content	Uses active learning methods (vs. exclusive use of traditional lecture)	Teaching Philosophy Teaching Portfolio Annual Report Course Evaluations Course Syllabi Lecture Materials	Chair Peers Educational Specialists Students	Appropriate methods rubric Course evaluations or peer review (summary of #s and comments) documenting ability to use active learning
		Attends workshops or training on active learning teaching strategies	Teaching Portfolio Annual Report	Chair	Appropriate methods rubric
Standard 3 – Appropriate Methods	Comprehends pedagogy; Articulates best teaching methods (best practices) for teaching given content	Supports chosen teaching method with scholarly literature (evidence-based)	Reference list in Teaching Philosophy Teaching Portfolio Annual Report Examples of current to deliver content	Chair Peers Educational Specialists Curriculum Committee	Appropriate methods rubric Peer or educational specialist review of chosen teaching method
		Description of how course materials changed over time based on feedback (self, student, peer)	Teaching Philosophy Examples of updated materials Course evaluation table	Chair Peers Educational Specialists	Appropriate methods rubric Longitudinal review of course evaluations on student perceptions of teaching strategy

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Table 1. (Continued)

Standard	Scholarly Teaching Foundation Core	Artifact/Evidence	Documentation Strategy	Assessor	Assessment Tool (see Appendices 1-7 for example rubrics)
Standard 4 – Significant Results	Assessment Principles (Alignment of objectives, teaching methods and assessments) (Formative vs. summative) (Validity & reliability) (Item analysis & Test statistics)	Documents alignments of clear goals, teaching and assessment methods (appropriate methods) Conducts learner assessments (pre-post tests, formative vs. summative assessments, etc) to demonstrate learning outcomes Uses statistical analysis of learner results to review results Attends workshops on item analysis interpretation and general assessment principles Creates or selects structured grading tools to psychometrically assess student performance Uses rubrics or other grading tools to assess performance-based assessment	Teaching Philosophy Teaching Portfolio Annual Report Course Evaluations Teaching Philosophy Teaching Portfolio Annual Report Course Syllabi Teaching Philosophy Teaching Portfolio Teaching Philosophy Teaching Portfolio Teaching Philosophy Teaching Portfolio Annual Report Teaching Philosophy Teaching Portfolio Annual Report Reference list Teaching Philosophy Teaching Portfolio Annual Report Teaching Philosophy Teaching Portfolio Annual Report	Chair Peers Educational Specialists Students Chair Educational Specialists Peers Curriculum or Assessment Committee Chair Statistician Chair Chair Chair Educational Specialists Peers Curriculum or Assessment Committee Chair Peers Educational Specialists Statistician Curriculum or Assessment Committee Students	Significant results rubric Course evaluations or peer review (summary of #s and comments) documenting ability to align material Significant results rubric Peer review of materials Significant results rubric Significant results rubric Significant results rubric Significant results rubric Peer review of assessment tools Significant results rubric Peer review of assessment tools Documentation of number of faculty using your assessment tool(s)

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Table 1. (Continued)

Standard	Scholarly Teaching Foundation Core	Artifact/Evidence	Documentation Strategy	Assessor	Assessment Tool (see Appendices 1-7 for example rubrics)
		Attends workshops on creating and using grading tools	Teaching Philosophy Teaching Portfolio Annual Report	Chair	Course evaluations or peer review (summary of #'s and comments) documenting grading tool use Significant results rubric
	Writing Multiple-Choice Test Questions	Writes effective multiple-choice questions	Teaching Philosophy Teaching Portfolio Annual Report Students	Chair Peers Educational Specialists Students	Multiple-choice test question rubric
	(if multiple-choice test questions used; otherwise n/a)				Course evaluations or peer review (summary of #'s and comments) documenting test question clarity Significant results rubric
Standard 5 – Effective Presentation	Presents learning results to colleagues, peers and students	Attends workshops on writing effective multiple-choice test questions Shares results of learner assessments with colleagues teaching in same course or related material Shares statistical analysis of course faculty's assessment results to those specific faculty involved in teaching experience (course, rotation, etc)	Teaching Philosophy Teaching Portfolio Annual Report Department or college meeting Curriculum or Assessment Committee Meeting Faculty Retreat Teaching Portfolio Annual Report	Chair Educational Specialists Peers Curriculum or Assessment Committee Chair Peers	Effective presentation rubric Effective presentation rubric

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Table 1. (Continued)

Standard	Scholarly Teaching Foundation Core	Artifact/Evidence	Documentation Strategy	Assessor	Assessment Tool (see Appendices 1-7 for example rubrics)
		Receives peer evaluation of results	Teaching Portfolio Annual Report	Chair Peers Educational Specialists Curriculum or Assessment Committee	Effective presentation rubric
		Creates a test bank for specific assessments	Teaching Philosophy Teaching Portfolio Annual Report	Chair Colleagues	Effective presentation rubric
		Uses assessment results to provide feedback to students about their learning	Teaching Philosophy Teaching Portfolio Annual Report Course Evaluations	Chair Educational Specialists Students	Significant results rubric Course evaluations (summary of #'s and comments) documenting ability to provide feedback about assessment
Standard 6 – Reflective Critique	Systematically and regularly/continuously reflects on outcomes using structured process or template	Reflects on and evaluates evidence gathered from teaching encounter (goals, methods, results, peer and students evaluation, etc) by documenting what did and did not work, whether goals and objectives were achieved, significance of results how they know (evidence) that students learned	Teaching Portfolio Teaching Philosophy Annual Report	Chair Educational Specialists Peers Curriculum or Assessment Committee	Reflective critique rubric
		Reflects on evaluation of teaching encounter to propose new goals or future modifications	Teaching Portfolio Teaching Philosophy Annual Report	Chair Educational Specialists Peers Curriculum or Assessment Committee	Reflective critique rubric

are significant, there are resources available to facilitate this shift. Training in education methods can be obtained through: 1) at the faculty's institution through a teaching excellence center or in-house educational specialist, 2) national conferences that offer teaching workshops 3) on-line resources such as Education Scholar (www.educationscholar.org), 4) education journals and textbooks such as McKeachie's *Teaching Tips*.¹⁵ Faculty can demonstrate their scholarly resources using tools such as their annual report, teaching philosophy or teaching portfolio, Department chairs and other evaluators can use the six qualitative standards that help define scholarship as a framework to guide their evidence based assessments, which are described below.²

Suggestion #1. Add emphasis to the importance of scholarly teaching during the faculty interview process by requiring candidates deliver a teaching seminar in addition to the research seminar during faculty interviews and/or have faculty share their teaching philosophy and teaching portfolio.

Suggestion #2. Schools hold faculty accountable for engaging in scholarly teaching on an annual basis. Consider using documentation suggestions for the six criteria described below.

Clear Goals

As scholarly teachers, faculty should state the purpose of their work clearly by creating and articulating specific and quantified goals and objectives to their learners.^{2,16} Therefore, as part of core teaching training or a teaching certificate program, faculty should complete a workshop in how to write effective objectives and how to use the objectives in teaching encounters. Faculty could demonstrate evidence of achieving this standard describing their consistent use of objectives in their teaching. A teaching portfolio and/or annual report are useful tools where faculty could present evidence of their abilities in the following ways:

1. Document attendance at faculty development sessions about goal and objective writing and use in teaching encounters.
2. Provide examples of objectives (could also be documented in course syllabi or lecture hand-out).
3. Document alignment of objectives with teaching with assessment.
4. Document peer, student and curriculum committee evaluation of the written objectives and their perceptions of the utility of the goals and objectives for facilitating student learning.

During annual evaluation, department chairs could annually assess the evidence of this standard in the faculty

member's teaching philosophy, portfolio and/or annual report using a rubric (see Appendix 1 - Clear Goals rubric if one is not already in place) and help faculty set future performance goals and follow-up.

Adequate Preparation

Scholarly teachers adequately prepare to teach students and this preparation involves 3 areas: understanding students, how the course or lecture content fits into the curriculum, and how to use technology to facilitate student learning. Faculty could document their teaching preparation efforts in narrative form in their teaching philosophy or in tables in their teaching portfolio or annual report. This evidence could be evaluated by department chairs with the use of a rubric (see Appendix 2 - Adequate Preparation rubric if one is not already in place) by assessing the faculty member's:

1. List of the assessments they used to understand their students' knowledge, skills and attitudes and how they used the results to create or adapt their teaching objectives, methods, materials, assessments, or style.
2. Outline or map how their course content or lecture topic fits into the curriculum or within a series of courses and the results of discussions with the faculty involved in the other courses that influenced their course preparation.
3. List of the types of technology faculty prepared to use to deliver and/or assess their content such as classroom technology (e.g., PowerPoint slides), conferencing systems (e.g., Polycom), classroom management systems (e.g., Desire 2 Learn), simulation equipment, and audience response systems and any training they received to utilize the technology.

Appropriate Methods

Scholarly teachers effectively select and use appropriate, evidence-based teaching methods that align with their clear goals and objectives. Scholarly teachers that use appropriate methods demonstrate discipline-specific content expertise and pedagogical expertise, such as knowing active learning teaching methods, best practices described in the literature for teaching their content, and the most effective ways to deliver their content (create effective PowerPoint slides and organized handouts and deliver structured presentations that emphasize coaching and facilitating learning versus lecturing to students.¹⁷ For example, a scholarly teacher may document consistently low student participation in a given topic discussion and then seeks to increase participation. After searching the literature he/she finds evidence that team-based learning is

an appropriate method for increasing student participation and upon selecting this method, he/she attends a workshop at a national convention to learn best practices for implementing this strategy. Scholarly teachers go beyond self-reflection to measure the appropriateness of their teaching methods by recognizing the role of structured peer (which include colleagues, department chairs and educational specialists) and student evaluation using standard teaching evaluation forms that are available in the literature or at the faculty's institution. Faculty could document their teaching strategies and materials, workshop participation, teaching evaluations, and descriptions and artifacts of material revision in their teaching portfolio or annual report and describe their efforts in their teaching philosophy. Department chairs could assess this standard using a rubric (see Appendix 3 Appropriate Methods rubric if one is not already in place and teaching philosophy rubric available at Education Scholar module 1¹⁸). Overall, chairs could assess faculty's description of their teaching belief, the method they used to implement that belief teaching students, the literature supporting the belief and method, and feedback they received from learners related to teaching strategy and style and active learning.¹⁸

Significant Results

Scholarly teachers assess their teaching methods using appropriate tools and effectively examine the results to determine the impact on student learning (including knowledge, skill and attitude development). Faculty could document these results in their teaching philosophy, portfolio, or annual review and department chairs could utilize rubrics (see Appendix 4 - Significant Results rubric if one is not already in use) when assessing these results. For instance, chairs could assess if the results:

1. Aligned with the faculty's goals (clear goals) and teaching and assessment methods (appropriate methods).
2. Included learner assessments to demonstrate learning outcomes (such as pre-post tests or formative and summative assessments).
3. Included statistical analysis of learner results to demonstrate learning outcomes and assess results significance.
4. Received peer-review of the assessment tool the faculty may have developed.
5. Generated enough significance to warrant use of the assessment tool by other faculty in the college for their courses.
6. Received accurate interpretation by the faculty member. For example, was item-analysis interpreted consistently and correctly? Was poor per-

formance systematically reviewed and interpreted. Were pre-determined cut-off points established? Was clarity of the question stem or distracters evaluated? Were alterations in scoring used and justified?

Chairs or peers could also assess the effectiveness of a faculty member's multiple-choice test questions (if used) by using a standardized rubric such as Appendix 5 - Multiple-choice test questions rubric.

Effective Presentation

While scholarly teachers effectively present their work, it is important to clarify what work is presented. The first interpretation relates to whether faculty effectively presented their teaching materials, however, this aspect is addressed in standard 3-appropriate methods (e.g., whether the teacher created effective PowerPoint slides and the formal feedback received from students using standardized course evaluations and peers using standardized teaching evaluation tools to document the effectiveness of the presentation). The second interpretation emphasizes effective presentation of the results, such as "Did the faculty member communicate the results with the intended audience?"² by sharing the results with their colleagues that may be impacted by the results, such as those that teach related content. Sharing and discussing results helps teams of faculty achieve their maximum impact with student learning because it helps coordinate and refine the content. It seems most reasonable to limit the presentation of results within the college since peer-reviewed and public dissemination is a distinguishing feature of SoTL. Scholarly faculty could describe their efforts to share the results of their course or lecture outcomes with colleagues teaching related content in their teaching philosophy, teaching portfolio, annual report, department, college or committee meetings or faculty retreats by noting how the results have impacted course evolution, student learning and even program outcomes. The number of faculty communicated with and the formal nature of these communications may warrant documentation in the teaching portfolio or in the service section of the promotion dossier. Faculty should also document how they shared the results with the learners to clarify, remediate, or reinforce topics that had significant results. Related to this item, chairs could assess how the faculty uses test banks to refine assessments and longitudinally track students learning outcomes. See Appendix 6 – Effective Presentation rubric if one is not already in place.

Reflective Critique

It seems intuitive that one who approaches his/her teaching as a scholar would seek to understand the outcomes

and lessons learned to improve the quality for the next iteration using the evidence they have gathered in the previous standards. Scholarly teachers engage in reflective critique that includes self-evaluation as well as peer evaluation.

Using a structured process of evaluation during the reflective critique can be helpful. Faculty or department chairs could use a rubric (see Appendix 7 - Reflective Critique rubric if other department rubrics are not available). Faculty could also examine their teaching using the six standards of scholarship since they outline the evidence that is available for reflection. An institution's strategic plan or the faculty's annual goals may also provide guidance for reflection. What is important is that the reflection is purposeful, goal-directed and included elements of evaluation. Questions one could ask in this self-assessment include "What worked? What didn't work? Did you meet established goals? And what will you do to improve next time?" The scholar should pose these and other questions while examining teaching data (teaching plans, tools, products) and feedback data (student and peer evaluations of teaching).

Reflection on one's teaching practice is often encouraged during an annual performance review, but for scholarly teachers annual reflection is not sufficient. Reflection achieves its potential as a quality improvement activity when it is continuous and systematic. This may be accomplished through consistent review of one's teaching philosophy and the active maintenance of a teaching portfolio (or a teaching component in a more comprehensive academic portfolio such as a promotion dossier).¹⁹ As the scholar seeks to optimize his individual potential as a teacher, it follows that sharing those lessons learned with department chairs and peers through portfolio review of the teaching activity or product enables broader input for the reflection and additional creative possibilities for improvement in the practice. Overall, a habit of reflection actually influences one's planning of future activities, through the knowledge that they too will be evaluated. The application of lessons learned through self-reflection can thus provide both motivation and encouragement to the teaching scholar, furthering his potential.

Summary of Six Standards

In summary, all faculty should be required to demonstrate their abilities and be evaluated as scholarly teachers. Faculty should quantify their work using the six qualitative standards that define scholarly work and document their scholarly teaching evidence in their teaching portfolio, teaching philosophy, and/or annual report. The six standards also provide the assessment framework needed to evaluate the evidence which should allow for more meaningful evaluation of the teaching component

of the tripartite mission and increased balance and value within the mission.

Preparing for the Future

The expectation that faculty demonstrate their abilities as scholarly teachers must be coupled with the availability of training in teaching and assessment methods, since the amount of training faculty receive prior to their first academic appointment is variable. This training can be achieved through teaching development programs or workshops, teaching consultation with instructional designers or teaching mentors and through self-study. Teaching development programs can train faculty about the nature of and skills for scholarly teaching. Participation in teaching development programs is associated with enhanced teaching skills and teaching behaviors.²⁰⁻²² Some new faculty complete teaching certificate programs during their training, while other new and even current faculty have not. Therefore, making teaching development programs available to all faculty (and all individuals with assigned teaching responsibilities such as part-time faculty, residents, and graduate students) is a key element for preparing faculty to demonstrate their scholarly teaching abilities.

Developing faculty members as scholarly teachers can also be facilitated through support and training from in-house instructional design experts or centralized centers for excellence in teaching and learning if available at the individual's college and university. Institutions that lack these personnel or centers should consider utilizing or developing the following scholarly teaching resources/strategies for current and future faculty as a self-study program. These strategies are described in a continuum starting with PharmD students with additional resources shown in Table 2.

- As Pharm.D. students during presentation activities in the curriculum, students can be exposed to and held accountable to scholarly teaching requirements such as setting clear goals, adequately preparing, using appropriate methods, and engaging in reflective critique. These presentation activities could be assessed using the same rubrics described earlier in this document.
- Colleges and Schools of Pharmacy can offer elective Advanced Pharmacy Practice Experience (APPE) in teaching or academia that expose students to the concept of scholarly teaching and other topics related to careers in academia.²³⁻²⁴
- Pharm.D. students, graduate students and residents should be encouraged to apply with a faculty mentor to the Walmart Scholars Program sponsored by the American Association of Colleges of

Table 2. Resources Available to Equip Graduate Students, Post-Graduate Fellows, Residents, and Junior Faculty for Careers in Excellence in Teaching

Resource	Description
American Association of Colleges of Pharmacy	Education Scholar (www.educationscholar.org). Designed for the busy professional, the Education Scholar program offers a comprehensive online curriculum that will expand your knowledge and skills as a health professions instructor. Module concepts are presented through a combination of on-screen text, images and audio clips. AACP/Walmart Scholar program Graduate students, professional (doctoral) students, residents and fellows, along with their faculty mentors, are eligible to apply for the scholarships.
Pharmacist's Letter preceptor training and resource network (http://pharmacistsletter.therapeuticresearch.com/)	The goal of the Preceptor Training and Resource Network is to provide a platform to easily connect pharmacists to teaching resources, preceptor training programs, and help Schools and Colleges of Pharmacy enhance the precepting offered by the pharmacists who participate in the program. Access provided through individual subscription or through preceptors resources of college or school of pharmacy experiential program.
Teaching Professor (http://www.teachingprofessor.com/)	A leading source of information and inspiration for educators committed to creating a better learning environment. As part of its ongoing commitment to higher education, <i>The Teaching Professor</i> sponsors an annual conference that connects dedicated teaching professionals with the best resources available. This three-day event, attended by 600+ participants from inside and outside the U.S., features outstanding, peer-reviewed programs on teaching and learning presented by top-notch speakers, all experts in their field. The program of workshop sessions and plenary events offers attendees a variety of learning experiences and networking opportunities, while the exhibit display area affords them a chance to meet representatives from outstanding suppliers of highly effective tools and resources for enhancing the teaching and learning experience.
Faculty Focus (http://www.facultyfocus.com/)	Through its free e-newsletter and dedicated website, <i>Faculty Focus</i> publishes articles on effective teaching strategies for the college classroom — both face-to-face and online. <i>Faculty Focus</i> was created in 2003 by Magna Publications.
Tomorrow's Professor (http://ctl.stanford.edu)	Tomorrow's Professor Listserv is a twice weekly posting that seeks to foster a diverse, global teaching and learning community among its nearly 19,000 subscribers at over 600 institutions and organizations in over 100 countries around the world.
<i>Clinical Faculty Survival Guide</i>	Zlatic TD. <i>Clinical Faculty Survival Guide</i> . Lenexa: KA: American College of Clinical Pharmacy. 2010. Targeted to benefit clinical faculty starting their journey in academia balancing all sorts of responsibilities

Pharmacy (AACP) where the winning faculty-student pairs receive support to attend the AACP Annual Meeting and Teachers Seminar to learn about scholarly teaching, SoTL, educational research, academic committee work, and other faculty teaching responsibilities. Student faculty pairs that are not selected as participants in the Walmart scholars program are still encouraged to attend the AACP Annual Meeting and Teachers Seminar.

- Pharm.D. and graduate students, residents, students, and faculty can learn more about specific aspects of scholarly teaching through AACP special interest groups (SIGs) such as the Assessment SIG, Curriculum SIG, Technology in Pharmacy Education and Learning SIG (www.aacp.org).

- Colleges and Schools of Pharmacy can offer the Preparing Future Faculty program (www.preparing-faculty.org/), which is a national program developed in 1993 launched by the Council on Graduate Schools and the Association of American Colleges and Universities aimed at training graduate students and post-doctoral candidates for careers in teaching and provides mentored teaching opportunities. Similarly, the National Institutes of Health offers Teaching Fellowships for post-doctoral candidates (www.nationalpostdoc.org/careers/career-planning-resources/186-postdoctoral-teaching-fellowships).
- There are a growing number of Post-Graduate Year I and II residency programs offering Teaching Certificate programs to provide them with

teaching opportunities and pedagogical content knowledge. Some programs may not offer a formal certificate program but still provide mentored teaching opportunities to residents.²⁵⁻²⁶ It is important to note that there is variability in the teaching program structure and requirements since there is no accreditation or standardization of the certificate programs.²⁷ However, the intent of the programs could still focus on preparing residents for a career as a scholarly teacher.

- Education Scholar© (www.educationscholar.org) is a comprehensive interdisciplinary web-based teaching program available to faculty, graduate students and residents for a registration fee.
- Graduate students, residents and faculty can subscribe to education journals (e.g. American Education Research Journal, Journal of Educational Psychology, Medical Education, Academic Medicine, American Journal of Pharmaceutical Education) often available for no additional cost through the university library. There are also free listservs to learn more about scholarly teaching (Tomorrow's professor (www.csl.stanford.edu), the Teaching Professor (www.teachingprofessor.com), Faculty Focus (www.Facultyfocus.com), and the Pharmacist's Letter (<http://pharmacistsletter.therapeuticresearch.com/>)).
- Existing experienced faculty who engage in scholarly teaching can also serve as coaches or mentors to other faculty, graduate students, and residents.
- Colleges or Schools of Pharmacy could encourage future and current faculty to enroll in master's or Doctor of Education programs in Educational Psychology or Medical Education.

Overall, colleges and school of pharmacy should require from all faculty (including preceptors, newly hired junior faculty, tenured faculty) to complete a teaching certificate within 2 years of their faculty appointment unless otherwise completed during residency or graduate school) and should be required to complete continuing professional development in teaching throughout their career in order to demonstrate their abilities as scholarly teachers.

Suggestion #3. All faculty should complete the requirements described in the six standards of scholarly teaching for a core foundation of teaching knowledge upon hiring or within 2 years of teaching appointment.

Suggestion #4. Appreciate that scholarly teaching begins with students and goes through emeritus. Encourage schools to begin discussions of scholarly teaching with students by offering criteria for elements of scholarly

teachers during the student driven teacher of the year awards (rewards could reflect criteria).

Suggestion #5. Colleges and schools of pharmacy should develop mentoring programs dedicated to helping new faculty with scholarly teaching.

Recommendation #1. A fellow of AACP (fellowship) designation that would recognize excellence in scholarly teachers and in the scholarship of teaching and learning. They could submit a teaching portfolio application that would be evaluated using a grading tool.

Recommendation #2. AACP should add a scholarly teaching track designation (similar to an assessment track designation) to help guide attendees including Walmart Scholars and graduate students interested in developing this area.

Recommendation #3. AACP should provide colleges and schools a resource to help guide Teacher of the Year selections that could also be used to educate students on what scholarly teaching involves to better inform their decisions.

REFERENCES

1. Boyer EL. *Scholarship Reconsidered: Priorities of the Professoriate*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching, 1990.
2. Glassick CE, Huber MT, Maeroff GI. *Scholarship Assessed: Evaluation of the Professoriate*. San Francisco, CA: Jossey-Bass; 1997.
3. Hutchings P, Shulman LS. The scholarship of teaching: new elaborations, new developments. *Change*. 1999;31(5):10-15.
4. Richlin L. Scholarly teaching and the scholarship of teaching. In: *Scholarship Revisited: Perspectives on the Scholarship of Teaching*. Kreber C, ed. San Francisco, CA: Jossey-Bass; 2001. pp. 57-68.
5. Fincher RE, Work JA. Perspectives on the scholarship of teaching. *Med Educ*. 2006;40(4):293-295.
6. Draugalis J. The scholarship of teaching as career development. *Am J Pharm Educ* 1999;63(3):359-363.
7. Hammer D, Piascik P, Medina M, et al. Recognition of teaching excellence. *Am J Pharm Educ*. 2010;74(9):Article 164.
8. Piascik P, Pittenger A, Soltis R, et al. An evidence basis for assessing excellence in pharmacy teaching. *Currents Pharm Teach Learn*. 2011;3(4):238-248.
9. Piascik P, Bouldin A, Schwarz L, et al. Rewarding excellence in pharmacy teaching. *Currents Pharm Teach Learn*. 2011;3(4):249-254.
10. Medina MS, Hammer D, Rose R, et al. Demonstrating excellence in pharmacy teaching through scholarship. *Currents Pharm Teach Learn*. 2011;3(4):255-259.
11. Accreditation Council for Pharmacy Education (ACPE). Accreditation standards and guidelines for the professional program in pharmacy leading to the doctor of pharmacy degree. http://www.acpe-accredit.org/pdf/ACPE_Revised_PharmD_Standards_Adopted_Jan152006.pdf. Accessed July 7, 2012.
12. Accountability, bureaucratic bloat, and federal funding of higher education. A Q&A with Virginia Foxx, chair of the house subcommittee on higher education. *Acad Online*. 2011;97(4).

American Journal of Pharmaceutical Education 2012; 76 (6) Article S5.

13. Harnisch T. Performance-based funding: a re-emerging strategy in public higher education financing. A Higher Education Policy Brief. American Association of State Colleges and Universities. 2011.
14. Kennedy RH, Gubbins PO, Luer M, Reddy IK, Light KE. Developing and sustaining a culture of scholarship. *Am J Pharm Educ.* 2003;67(3):Article 92.
15. Svinicki M, McKeachie WJ. *McKeachie's Teaching Tips: Strategies, Research, and Theory for College and University Teachers.* 13th ed. Belmont, CA: Wadworth; 2011.
16. Medina MS. Using the 3 E's (emphasis, expectations, and evaluation) to structure writing objectives for pharmacy practice experiences. *Am J Health-Sys Pharm.* 2010;67(7):516-521.
17. Medina MS, Herring H. Teaching during residency: five steps to better lecturing skills. *Am J Health-Sys Pharm.* 2011;68(5):382-387.
18. Medina MS, Draugalis JR. Developing a Personal Working Philosophy to Guide Teaching/Learning in Health Professions Education. In: *Education Scholar – Teaching Excellence and Scholarship Development Resources for Health Professions Educators.* Western University of Health Sciences: Pomona, California; 2012: in press.
19. Seldin P, Miller JE. *The Academic Portfolio: A Practical Guide to Documenting, Teaching, Research, and Service.* San Francisco, CA: Jossey-Bass, 2009.
20. Steinert Y, Mann K, Centeno A, Dolmans D, Spencer J, Gelula M, Prideaux D. A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education. *Med Teach.* 2006;28(6):497-526.
21. Knight AM, Cole KA, Kern DE, et al. Long-term follow-up of a longitudinal faculty development program in teaching skills. *J Gen Intern Med.* 2005;20(8):721-725.
22. Medina MS, Williams VN, Fentem LR. The development of an education grand rounds program at an academic health center. *Int J Med Educ.* 2010; 1:30-36.
23. Roche V, Limpach A. A collaborative and reflective academic advanced pharmacy practice experience. *Am J Pharm Educ.* 2011; 75(6):Article 120.
24. Sylvia LM. An advanced pharmacy practice experience in academia. *Am J Pharm Educ.* 2006;70(5):Article 97.
25. Romanelli F, Smith KM, Brandt BF. Teaching residents how to teach: a scholarship of teaching and learning certificate program (STLC) for pharmacy residents. *Am J Pharm Educ.* 2005;69(2): Article 20.
26. Medina MS, Herring HR. PGY II advanced teaching certificate programs: next steps for PGY II residents who completed a PGY I teaching certificate program. *Am J Health-Sys Pharm.* 2011;68:2284-2286.
27. Falter R, Arrendale J. Benefits of a teaching certificate program for pharmacy residents. *Am J Health-Syst Pharm* 2009;66(21):1905-1906.

Appendix 1. Clear Goals Rubric

	Pts Earned (out of 9)
1. Provided objectives in handout or syllabi or slides and verbally oriented students to the objectives	1
Provided objectives in handout or syllabi or slides but did not verbally orient students to the objectives	0.5
No objectives verbalized or provided in handout or slides or syllabi	0
2. All objective sentences starts with the verb	1
Some of the objective sentences start with the verb	0.5
All objective sentences starts with “the student is able to” or “to”	0
3. All verbs used in each objective are measurable	1
Some of the objectives use verbs that are measurable (e.g., some - know/understand)	0.5
No measurable objectives (know, understand)	0
4. No objective verbs overlap	1
Some of the objective verbs overlap	0.5
Same verb used for all objectives	0
5. All objectives written using quantified language (using numbers or amounts)	1
Some of the objectives use quantified language	0.5
None of the objectives do not use quantified language	0
6. All objectives written at appropriate levels for students (such as Bloom’s taxonomy or other level)	1
Some objectives written at a too high or too low level for students	0.5
All objectives written at a too high or too low level for students	0
7. All test questions were aligned with objectives	1
Some test questions were aligned with objectives	0.5
Test questions and objectives were not aligned	0
8. Documented consistency/improvement in course evaluation results for student perceptions of objectives utility	1
No documented consistency/improvement in course evaluation results for objectives utility	0
9. Has documented attendance at least 1 workshop on writing effective goals and objectives	1
Does not have documented attendance at least 1 workshop on writing effective goals and objectives	0

Appendix 2. Adequate Preparation Rubric

	Pts Earned (out of 11)
1. Lists the assessment(s) used to understand students in annual report or teaching portfolio table	0.5
Did not list the assessment(s) used to understand students in annual report or teaching portfolio table	0
2. Summarizes the results of the assessment(s) used to understand students	1
Did not summarize the results of the assessment(s) used to understand students	0
3. Described how the results of the assessment(s) were used to understand students	1
Did not describe how the results of the assessment(s) were used to understand students	0
4. Diagrams or describes how their course or lecture fits into the curriculum	1
Did not diagram or describe how their course or lecture fits into the curriculum	0
5. Listed workshops attended to advance the instructor's understanding of students in annual report/teaching portfolio	1
Did not describe (or attend) workshops attended to advance the instructor's understanding of students	0
6. Documented consistency/improvement in course evaluation results for understanding students	1
No documented consistency/improvement in course evaluation results for understanding students	0
7. Lists the reference(s) of scholarly literature pertaining to best practices for using technology to teach material	1
Did not list the reference(s) of scholarly literature pertaining to best practices for using technology to teach material	0
8. Lists the technology used to deliver instructional materials to students in annual report or teaching portfolio table	0.5
Did not list the technology used to deliver instructional materials to students in annual report or teaching portfolio	0
9. Listed workshops or training attended related to technology in annual report or teaching portfolio table	1
Did not describe workshops or training attended related to technology	0
10. Documented consistency/improvement in course evaluation results for student perceptions of technology use	1
No documented consistency/improvement in course evaluation results for technology use	0
11. Received peer or educational specialist feedback about ability to understand students and use technology	1
Did not receive peer or educational specialist feedback about ability to understand students and use technology	0

Appendix 3. Appropriate Methods Rubric

	Pts Earned (out of 7)
1. Lists the teaching methods used to deliver instruction to the students	1
Did not list the teaching methods used to deliver instruction to the students	0
2. Uses (consistently) active learning (vs. exclusive use of traditional lecture) to teach students	2
Did not use active learning (exclusively used traditional lecture) to teach students	0
3. Lists workshops or training attended that covered active learning teaching strategies	1
Did not describe (or attend) workshops attended that covered active learning teaching strategies	0
4. Lists the reference(s) of scholarly literature pertaining to best practices for teaching given content	2
Did not list the reference(s) of scholarly literature pertaining to best practices for teaching given content	0
5. Provides examples of teaching materials and changes made over time	2
Examples of teaching materials were incomplete	1
Did not provide examples of teaching materials	0
6. Documented consistency/improvement in course evaluation results regarding teaching method used	1
No documented consistency/improvement in course evaluation results for teaching method used	0
7. Received peer/educational specialist feedback about use of evidence-based active learning teaching methods	1
Did not receive peer or educational specialist feedback about use of active learning teaching methods	0

Appendix 4. Significant Results Rubric

	Pts Earned (out of 11)
1. Documented alignment of objectives (clear goals), teaching methods (appropriate methods) and assessments	1
Did not document alignment of objectives (clear goals), teaching methods (appropriate methods) and assessments	0
2. Documented the use of various assessments to measure student learning outcomes (e.g., pre-post tests)	1
Did not document the use of various assessments to measure student learning outcomes (e.g., pre-post tests)	0
3. Created or used structured grading tools to psychometrically assess student performance	1
Did not create or use structured grading tools to psychometrically assess student performance	0
4. Received (and documented) peer evaluation of assessments, grading tools	1
Did not receive (or document) peer evaluation of assessments, grading tools	0
5. Documented use of statistical analysis of assessment results to evaluate significance of results	1
Did not document use of statistical analysis of assessment results to evaluate significance of results	0
6. Supported the assessment method or grading tool with at least 1 piece of evidence based literature	1
Did not support the assessment method with at least 1 piece of evidence based literature	0
7. Documented at least 1 piece of evidence/data the instructor collected regarding student learning as a result of the teaching method (described outcomes of student assessment)	1
The evidence/data that was offered was anecdotal, vague or incomplete	0.5
Did not include evidence regarding student learning	0
8. Documented when peers have used the instructor's grading tools	1
Did not document when peers have used the instructor's grading tools or peers have not used the tools	0
9. Documented feedback received from students regarding assessment methods and grading tools	1
Did not document feedback received from students regarding assessment methods and grading tools	0
10. Documented attendance at least 1 workshop on assessment principles	1
Did not document attendance at least 1 workshop on assessment principles	0
11. Documented attendance at least 1 workshop on creating or using grading tools	1
Did not document attendance at least 1 workshop on creating or using grading tools	0

Appendix 5. Multiple-Choice Test Question Rubric

	Pts Earned (out of 10)
1. All test questions were aligned with objectives	1
Some test questions were aligned with objectives	0.5
Test questions and objectives were not aligned	0
2. All test question stems were meaningful by themselves	1
Most test question stems were meaningful by themselves	0.5
No test question stems were meaningful by themselves (stem needs to be expanded)	0
3. No test question stems were formatted as NOT (OR EXCEPT, FALSE) questions	1
Some of the question stems were formatted as NOT (OR EXCEPT, FALSE) questions	0.5
All test questions were formatted as NOT questions	0
4. All test question stems were free from irrelevant material (and used proper form a/an)	1
Some of the test questions were free from irrelevant material (and had a/an)	0.5
All test questions had irrelevant material (and had a/an)	0
5. All test question alternatives/options were plausible and realistic	1
Some of the test question options were NOT plausible and realistic	0.5
All test question options were NOT plausible and realistic	0
6. All test questions alternatives/options were homogeneous in length, language used	1
Some of the test questions alternatives were homogeneous in length, language used	0.5
All test questions alternatives were NOT homogeneous in length and language	0

(Continued)

Appendix 5. (Continued)

	Pts Earned (out of 10)
7. All test question alternatives were free from repetitive words or phrases	1
Some of the test question alternatives were free from repetitive words or phrases	0.5
All test question alternatives used repetitive words or phrases	0
8. All test question alternatives were free of all or none of the above	1
Some of the test question alternatives used all or none of the above	0.5
All test question alternatives used all or none of the above	0
9. All test question alternatives were in ascending or descending order	1
Some of the test question alternatives were NOT in ascending or descending order	0.5
All test question alternatives were NOT in ascending or descending order	0
10. Has documented attendance at least 1 workshop on writing effective multiple-choice test questions	1
Does not have documented attendance at least 1 workshop on writing effective multiple-choice test questions	0

Appendix 6. Effective Presentation Rubric

	Pts Earned (out of 6)
1. Shares the results of learner assessments with colleagues teaching in course or related material	1
Did not share the results of learner assessments with colleagues teaching in course or related material	0
2. Shares statistical analysis of course faculty's assessment results to those specific faculty involved in teaching experience (course, rotation, etc)	1
Did not share statistical analysis of course faculty's assessment results to those specific faculty involved in teaching experience (course, rotation, etc)	0
3. Received (and documented) peer evaluation of assessments results	1
Did not receive (or document) peer evaluation of assessments results	0
4. Created a test bank for specific assessments	1
Did not create a test bank for specific assessments	0
5. Discussed/documentated how feedback about assessment results were delivered to learners	1
Did not discuss or document how feedback about assessment results were delivered to learners	0
6. Documented feedback received from students regarding assessment feedback	1
Did not document feedback received from students regarding assessment feedback	0

Appendix 7. Reflective Critique Rubric

	Pts Earned (out of 4)
1. Reflected on and evaluated evidence gathered from teaching encounter	1
Reflection or evaluation was incomplete (e.g., focused on narrow data, did not evaluate what was learned)	0.5
Did not reflect on or evaluate evidence gathered from teaching encounter	0
2. Reflected on evaluation of teaching encounter to propose new goals or future modifications	1
Did not reflect on evaluation of teaching encounter to propose new goals or future modifications	0
3. Used a systematic and structured process to reflect	1
Did not use a systematic and structured process to reflect	0
4. Continuously or regularly reflected on teaching encounter	1
Inconsistently reflected on teaching encounter	0.5
Did not regularly reflect on teaching encounter	0