Scholarly Productivity and the Busy Clinician Educator

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3 Connected Sessions, Stories from the Field, and a Personal Activation Plan

Session I: What is Scholarship
- What counts as scholarship
- Updated ACGME requirements

Session II: How to Get Started
- Identify 3 journals or conferences suitable for submitting a scholarly project
- Develop a personal action plan for increasing their scholarship over the next year and some key metrics for assessing success

Stories and Strategies

Session III: Institutional Strategies to Promote Scholarship
- Help faculty write more/produce more
- Time management; mentoring, and research support groups
Disclosures & Caveats

- I am employed by the ACGME
- Senior Scholar at the University of Illinois at Chicago
- I represent the *Journal of Graduate Medical Education*
- No financial conflicts of interest
- I cannot guarantee that suggestions given today will lead to publication in a journal!
- This cannot substitute for your own research and writing mentors
Session I: What is Scholarship?
Objectives

• Review Boyer’s criteria for scholarship and why they are important
• Review the recognized scholarly activities rubrics for faculty and trainees and high-level data on scholarly activities
• Present additions under discussion that are already largely implicitly recognized
• Distinguish between scholarly activities and scholarship
• Present Glassick’s standards as a possible means for assessing the scholarly activities process
• Scholarly Activities: Re-thinking Process vs. Outcomes
Why Scholarship? Benefits to Patients, the Profession, the Individual

Address the need for evidence in many areas

Part of “academic life”
Personally satisfying

And then there is…… Promotion and Tenure (P&T)
Most P&T Criteria Specify Scholarship
Teaching
Service
Why Scholarship: Domains

• Address the need for evidence in many areas

• Traditional Research:
  • Address issues related to new knowledge and transfer to the clinical setting
  • Assess new approaches to medical education

• Clinical Practice:
  • Introduce innovations to improve care/care delivery for patients, families
  • Improve the health of the community

• Quality and Safety Improvement

• Assess the Success of Implementation Efforts

• Across Boundaries: Scholarship that spans one or more of these domains
Scholarship: Boyer’s Proposal

• In 1990, Boyer proposed a new way of looking at scholarship in higher education
• He challenged the prevalent “research vs. teaching” debate
• He also argued that research alone will not alone secure the future of the university, nor that of the country at large
• He noted that research/discovery is a central function, but that 3 additional activities are critical to a vibrant portfolio of scholarship
Boyer’s 4 Categories of Scholarship

**Discovery:** most closely aligned with the traditional view of scholarship in which new knowledge is constructed, using research

**Integration:** concerned with interdisciplinary interconnectedness to enable research to be part of cohesive larger whole

**Application:** getting out of the Ivory Tower through work to address societal problems, using academic knowledge in the service of commerce, non-profit organizations, professional associations

**Teaching:** Formal scholarly work, including research, that seeks to improve teaching as a discipline

Boyer EL Scholarship reconsidered: Priorities of the professoriate. Carnegie Foundation for the Advancement of Teaching. 1990
Two More Recently Added Concepts

Scholarship of teaching and learning invites student and faculty learners into the conversation of teaching. Scholarship of teaching and learning expands the teaching community to include educational research, policy research, and those outside the educational institution involved in research and exchange for the betterment of society.

The Scholarship of Engagement is focused on how educational institutions interact, support, and engage with those outside of their system. It academic-community collaborations and their effects on social, ethical, and civic problems.


Boyer’s Discussion Points

The points Boyer makes is his 1990 discussion are deeply relevant to scholarly activities for faculty and trainees in accredited programs:

- “Faculty reward systems do not match the full range of academic functions.”
- Work life for faculty has changed to encompass a range of “competing obligations.”
- “Can we define scholarship in ways that reflect new realities?”
- “How does scholarship take in to account the application of new knowledge to real problems?”
- “What does it mean to be a scholar?”

Boyer EL Scholarship reconsidered: Priorities of the professoriate. Carnegie Foundation for the Advancement of Teaching. 1990
The "Milieu" Standards:

- Faculty maintains an environment of inquiry and scholarship with an active research component. II.B.5. (RS Faculty, FS Faculty Supervision/Teaching) (Core)
- The faculty regularly participates in organized clinical discussions, rounds, journal clubs, and conferences. II.B.5.a) (Detail)
- Faculty encourages and supports residents in scholarly activities. II.B.5.c) (Core) (RS Faculty, FS Faculty Supervision/Teaching)
ACGME Standards for Scholarly Activity for Faculty

The “Output” Standards:

• Some members of the faculty demonstrate scholarship by one or more of the following:
  • peer-reviewed funding; II.B.5.b).(1) (Detail)
  • publication of original research or review articles in peer reviewed journals, or chapters in textbooks; II.B.5.b).(2) (Detail)
  • publication or presentation of case reports or clinical series at local, regional, or national professional and scientific society meetings; II.B.5.b).(3) (Detail)
  • participation in national committees or educational organizations. II.B.5.b).(4) (Detail)
ACGME Recognized Scholarly Activity: Annual Data

Faculty:
- PubMed (count each)
- Abstracts/presentations/posters (1 point (pt) regardless)
- Other Presentations and publications (1 pt regardless of number)
- Chapters (1 pt regardless of number)
- Grants (1 pt count each)
- Leadership role (1 pt for yes)
- Educations leadership/materials (1 pt for yes)

Graduating Resident:
- PubMed (count each)
- Abstracts/posters/presentations (each counts as 1 point (pt)
- Chapters (1 pt regardless of number)
- Research project (1 pt for yes)
- Teaching/education (1 pt for yes)
Recognized Scholarly Activities for Faculty Details


2. **Abstracts/Presentations/Posters** - Number of abstracts, posters, and presentations given at international, national, or regional meetings.

3. **Other Presentations and Publications** - Number of other presentations given (grand rounds, invited professorships), published works in non-peer review publications and peer-reviewed publications not recognized by NLM.

4. **Chapters** - Number of chapters or textbooks published.

5. **Grants** - Number of grants for which faculty member had leadership role (Principal Investigator (PI), Co-PI, or site director).
6. **Leadership Role** - An active leadership role (such as serving on committees or governing boards) in national medical organizations, or serving as editorial board member or regular reviewer for a peer-reviewed journal.

7. **Quality Improvement (QI) Leadership** - Leadership of a program/institutional QI project with assessment/reporting of outcomes, or supervising and mentoring residents’/fellows’ quality improvement projects and initiatives.

8. **Education Leadership/Materials** - Teaching responsibility for a seminar or conference series, or course coordination (such as development and/or arrangement of materials, assessment of participants’ performance) for didactic training within the sponsoring institution or program, or the larger education community through distance learning or review of educational materials for a peer-reviewed resource such as MedEdPortal (https://www.mededportal.org/). Formal scholarly work to improve the discipline of teaching. Not a single presentation or lecture.
Rationale for expanded thinking around Scholarly Activities

• Feedback from the community and during outreach with the Journal suggests that activities other than publications (“Pubmed IDs”) are perceived as “less valued” by the ACGME and Review Committees and may receive less attention

• Many of these other activities are important to a truly vibrant portfolio of scholarship for a given program

• Recognition for the development or peer review of durable scholarly materials will be important to the ACGME’s growing focus on faculty development

• Some established forms are less frequent and potentially; some novel ways of scholarship are not (yet?) being considered
Small Group Work:
Where is(are) your sweet spot(s) for Scholarship and Scholarly Activity?

Use the list of options for ACGME-recognized scholarly activities.

Decide the 2 to 3 that appeal the most to you. In your small groups, briefly summarize why. If your “favorite” activity is not on the list, describe it and indicate why it should be included.
Large Group Debriefing on Themes
Effective Review and Critique of All Forms of Scholarship: Glassick’s Standards of Scholarly Work

1. Does the scholar have clear goals?

2. Is the scholar adequately prepared for the project? (Literature review, expertise, resources)

3. Has the scholar chosen appropriate methods? (adaptive to changes?)

4. Does the scholar achieve goals? (significant?)

5. Is there effective presentation of work?

6. Is there reflective critique? (self-evaluation, breadth of evidence?)

Enjoying the Journey: Process vs. Outcome or Scholarly Activities vs. Scholarship

- The current ACGME standards for faculty specify scholarly products, as evidence of the success of scholarly pursuits.
- However, unlike board pass rates, which is one outcomes metric embedded in a larger set of standards about the attributes of the educational program, the scholarly “products” specified in the scholarly activities in the current standards virtually stand alone.
- In contrast, the standards for residents appear more focused on the milieu and process.
- What Does the GME community and the ACGME Want? A Vibrant Learning Environment or Scholarly Output?
- I propose that both are needed.
“Practice is not scholarship until it generates, implements and/or disseminates research.”

~ Boyer
Session II: Getting Started
Session Objectives

- List strategies to enhance writing & publishing medical education research
- Discuss attributes that increase favorable consideration by academic journals
- Articulate a specific action plan for writing
  - Education research or innovation project
  - QI and Patient Safety Projects
  - Writing Strategies
  - Aligning the project with a journal & its requirements
- Consider 3 specific conferences or 3 specific journals for targeting a submission
- Complete personal activation plan to enhance your scholarship pursuit and results
Strategies for Writing & Publishing Your Research

• What is stopping YOU?
  • No time
  • No energy
  • No experience or writing skills
  • Can’t organize your thoughts, results on paper
  • No mentor
  • Prior rejection
Strategies

• Lack of time
  • Set aside a time each week to plan & write
  • Divide work into 1-hour steps, small achievable ‘bites’
  • Stick to your schedule

• Lack of energy
  • Get excited about sharing your work
  • Look at your schedule critically to create energy & space
  • Work with a group

• Lack of experience or writing skills
  • Read published articles in your topic area
  • Ask others to read your work (& be willing to read theirs)
Strategies con’t

- Difficulty organizing your thoughts, results, paper
  - *To be discussed in small group sessions*
- Prior rejection
  - View feedback as a valuable learning opportunity
- No mentor
  - Probably most critical factor for success
  - Someone to guide, gently nag, talk through problems
  - If none at your institution, consider
    - National organization
    - Outside your specialty
Attributes of Manuscripts that Determine Rejection or Acceptance

What are the most common problems in med ed studies?

A. Poor description of analysis used
B. Lack of conceptual framework
C. No literature review
D. No statement of study design

Answer?
Most often missing:

D. Statement of research design       84%
C. Appropriate literature review      55%
B. Conceptual framework              45%

Majority of papers had incomplete statements of research question/purpose

Description of analysis – least often missing
Quality =

Clear, pre-determined hypothesis or question

Methods appropriate to the question

Valid measurements of relevant outcomes

Appropriate analysis

Significant results
  • Think *practical impact*, not just statistical significance

Clear, organized writing

Thoughtful self-critique
Your Manuscript: IMRD

Introduction
• Why important & relevant to audience of this journal
• Brief literature review – describe evidence gap
• Explicit research hypothesis: your question or study purpose

Methods
• Settings & participants, intervention, outcomes, analysis, IRB

Results – data in tables/figures or text, not both

Discussion – compare findings to others, discuss limitations

Conclusions
• Logical, conservative, briefly summarize your findings

References – up to date, complete – not a review
Missed Opportunities: Introduction

• No discussion of evidence gap – so why do the study?

• Insufficient lit. search to demonstrate novelty of idea
  • Or lack of statement that lit. review found no studies

• Literature search old – missing recent studies

• Too long: literature search more suitable for a review

• No conceptual framework or theory as to why the research hypothesis should be true

• No statement of the research question or study purpose
Missed Opportunities: **Methods**

- Not organized
  - E.g., settings & participants, intervention, outcomes, analysis, IRB
- No statement of research design
- No outcomes
- Outcome measures do not match research question or purpose
- Immediate assessment of outcome after intervention - not addressed
- Literature citations not provided for previously developed instruments or surveys
- Use of home-grown instruments or surveys not discussed
- IRB approval or exemption not stated
Missed Opportunities: Methods (cont.)

• Studies finding no difference omitted β-error
  • Do power calculation prior to study: what is power of study to detect difference between groups?
    • Given study’s subjects & minimum meaningful difference between groups

• Multiple comparisons without correction, or correction not specified

• Lack of analysis of non-respondents

• Confusion about subjects in various groups
Missed Opportunities: **Discussion**

- Results (or lit. search) merely rehashed
- Limitations not fully analyzed
  - Full discussion does not harm chance of publication
- Conclusions overstated, speculative, too long

**Overall:**
- Writing style dense
- Run-on sentences
- Use of jargon
- Editorializing (opinions rather than facts)
- Over word limit! If necessary, discuss in submission cover letter
Navigating the Writing Process

• Be your own most avid critic
• Put yourself in the place of the reader
• Every part of the paper should support the take-home message, beginning with the title
• Think of the title as a “takeaway”
  • ie, a complete thought that cues the reader to the meaning of your paper
  • ”The effect of naps on residents in a night float rotation” vs.
  • “Naps have a positive effect on alertness of resident in a night float rotation”
Increasing Readability and Creating Flow

• Make your paper “skimmable” for busy readers
• Use sub headers, tables, graphs, figure and boxes to reduce text, including in descriptions of “qualitative” studies
• Succinct introduction:
  • Context (what is being discussed)
  • Complication (The problem deemed worthy of study)
  • Question (The scientific/improvement question that arises out of this)
  • Objectives/Intervention (What is being studied or improved)
• The use the remainder of the paper to flesh out this story
“Really Hot Topics” in Medical Education Research

• Characteristics of effective teachers and teacher development (Including residents as teachers)
• Identification and remediation of “low-achieving” learners
• Effective transitions (UGME to GME, GME to practice)
• Curriculum/goals mismatches between education and practice
• Adequacy of the required educational experience
  • Time, procedure and patient volume requirements
• Does competency-based education and assessment (or other educational interventions) have a benefit in practice
The Holy Grail of Impact: Kirkpatrick’s hierarchy of training outcomes

Outcomes in manuscripts submitted to medical education journal

- Results (impact)
  - Almost Never
- Behavior (transfer to workplace)
  - Rarely
- Learning (knowledge and skills)
  - Less often
- Reaction (awareness, attitude, satisfaction)
  - Often

Clinical Outcomes

Educational Outcomes
Methodologically Speaking: What is missing from the education research literature

• Going beyond surveys as tools for assessing interventions in graduate medical education
• Larger intervention studies (multi-site, multi-center, large sample)
• “Utility studies” to assess which approaches are the most efficacious, the most cost-effective
• The effect of dysfunctionality (or functionality) in the learning environment on resident learning and transfer into practice
  • Many editorials and commentaries, very few studies
• Systematic reviews and meta-analyses
  • As a way to aggregate data from underpowered primary studies prevalent in medical education
Deciding where to submit

Journal Scope:
- Look at homepage, instructions to authors, recent articles

Audience access:
- Will the article be accessible to the audience most interested

Journal impact and prestige:
- Aim high but be realistic

Editorial and production systems:
- Timely and efficient peer review; after acceptance, will the article be published quickly

Longevity:
- Will the article still be available in 10 or 50 years times?
Small Group Work: Generating a Submission Plan

Use the form provided with your materials.

From the list of Journals provided with the materials, the generic meeting list and your own specialty meeting list, select up to 3 meetings/and or journals and formulate a concrete submission plan.
Large Group Debriefing on Themes
Navigating the Editorial Process

• Read carefully - Rejection does not always mean “rejection”
• Understand what you need to do to satisfy reviewers and editors
• Prepare a point-by-point response that includes the reviewer comments: Editors and reviewers will love you
• Make changes to the manuscript, don’t rebut the comments
  When you disagree with reviewers and editors, give a clear argument why you have not changed the manuscript
• Do not give up if your paper gets rejected
  Use the reviews to improve the paper (look for editor’s cues)
  Rethink the journal and/or rethink the journal and format
Understand and Follow Ethical Principles in Writing/Publishing

• Representing the contributions of all co-authors and ensuring that listed co-authors made contributions
  • “Authorship/intellectual ownership” from conceptualization to design, data collection/manipulation/analysis, writing and editing
• Full disclosure of
  • Prior publications from the same study or same topic
  • Potential conflicts or competing interest
  • Ghost writers/editorial assistance
• Avoid at all costs
  • Plagiarism (even self plagiarism), “Salami” (Partial) Publications and “Goulash” Publications
  • Deliberate misrepresentation of data
  • Misquoting other authors (be sure they did or wrote what you report)
10 things to do if you do NOT want to get published

1. Adopt a ponderous, wordy and ambiguous style with lots of passive tense
2. Insert references to all your previous work, even work not remotely relevant to the current manuscript
3. Pick a journal at random because the title sounded impressive
4. Make sure you exceed the manuscript length by at least 1,500 words and two to three tables
5. Use inappropriate statistics (you saw them in an article you really liked)

   Use of parametric statistics with really small samples
6. Make wild leaps to conclusions not supported by your data, or jump to a different topic in your discussion section.

7. Choose a different reference style from that required by the journal. Better yet, use a mix of different reference styles.

8. Do not check your references and include several incomplete or incorrect ones.

9. Submit without a cover letter. Better yet, submit with the cover letter you used to submit the manuscript to the last journal, without changing a word.

10. **DO NOT** read the instructions to authors.

Responding to Decision Letters and Reviewer’s comments

• Rejection (The “Dreaded Letter”)
  • Read carefully: Rejection does not always mean “rejection”

• Major Revisions
  • Try to fully understand what you need to do to satisfy reviewers and editors

• Congratulations (The “Happy Letter”)
  • In most cases, you are not completely there yet
  • Read to get a sense of what changes the editors and reviewers want
Responding to Decision Letters and Reviewer’s comments

• Prepare a point-by-point response to the comments
  • Editors and reviewers will love you
• Make changes to the manuscript, don’t rebut the comments
  • When you disagree, mount a clear, logical argument
• Keep your cool and an open mind to the benefits of review
  • If you feel a review is “abusive” let the journal know
• Use the reviews to improve the paper
• For outright rejections:
  • Rethink the journal and/or rethink the journal and format
Making Your Scholarship Goals

SMART Goals

Specific (what and how)

Measureable (how much progress is expected)

Achievable (what are available resources)

Realistic (will you achieve the goal, why, and how)

Time (by when)

**Small Group Work:**
*Creating your Own Action Plan*

Use the form provided with your materials.
Work in small groups
Tables specifically for those in the ‘pre-contemplation’ phase of research
  
  *Who Me?”* (15-20 minutes)

Back to large group to share insights (10 minutes)
Complete your “personal activation” promise letter
Share your insights with your group
Large Group Debriefing on Themes

“I’m gonna write myself a letter……….”