

Chapter 1. Why pursue scholarly activity? Building a Framework

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“The progress of science and the scientific or intelligent practice of medicine employ, therefore, exactly the same technique. To use it, whether in investigation or in practice, the student must be trained to the positive exercise of his faculties; and if so trained, (the medical school) begins rather completes his medical education.” – Abraham Flexner

Objective: To build a framework that facilitates the learner’s ability to conceptualize the historical significance, purpose, and importance of scholarly activity in advancing medical science enabling the learner to answer the question “why pursue scholarly activity?”

Why pursue scholarly activity?

Scholarly Activity is often an intimidating prospect to junior residents and sometimes even junior faculty. It may feel like there are many obstacles to completing scholarly projects and thus the sheer amount of work involved stops some people before they ever start. That same trepidation may lead people to question, “Why pursue scholarly activity at all?” An easy first response to this question is that scholarly activity is an important component of graduate medical education requirements. But this only addresses extrinsic motivation to pursue scholarly activity. Intrinsic motivation to pursue scholarly activity comes from an understanding that such pursuits enhance life-long learning, provide a greater understanding of the changing landscape of medicine, and enable an environment of curiosity in the practice of medicine. This intrinsic motivation also addresses physicians who might say, “I just want to see patients.” You will become a better clinician if you understand the literature in a more informed way. Over 100 years ago Flexner recognized that understanding and practicing with a scientific approach was critical to clinical medicine. Scholarly activity is defined as a contribution to the knowledge available for the discipline of medicine, and is subject to peer review. Scholarship therefore is truly a component of practice-based learning and professionalism.

What are the requirements?

The Accreditation Council for Graduated Medical Education (ACGME) includes scholarly activity as a component of the Common Program Requirements. Scholarly activity is currently covered in section IV.B.2 via the statement “Residents should participate in scholarly activity.” Different specialties have other specific requirements. Family Medicine, for example, requires residents to complete two scholarly activities, at least one of which should be a quality improvement project.

The ACGME allows multiple avenues to complete scholarly activity that can be broken into specific types of scholarship. The four types of scholarship, as originally put forth by Boyer, are Discovery, Integration, Application and Education. The options to fulfill scholarly activity in these areas allow a tremendous amount of flexibility for completion of the ACGME requirement.

Discovery is the generation of new knowledge and sharing that knowledge with our community. Examples include bench, clinical, and epidemiological research. At the Resident level this can be presented via poster or publication at local conferences, a residency newsletter, or at regional (or higher) levels.

Integration is taking that knowledge and synthesizing it into something that is useful for physicians to use in practice. Examples of this that count towards ACGME goals include presenting a case study with literature review at a local or regional venue, presenting reviews of a chronic condition at a local or regional conference, and publications such as a newspaper article on a public health concern or a letter to editor analyzing the results of paper published.

Application is putting the knowledge into practice. Resident examples include describing a patient education program on risk behavior or chronic disease management in a residency newsletter, or serving as chair of a local or state medical society committee and publishing a report of that committee's accomplishments in a medical society newsletter.

Teaching as a form of scholarly activity includes the development of educational programs or resources to educate stakeholders such as students, healthcare professionals or the public. Options here range from presenting to faculty members and peers on a topic of interest based upon a needs assessment to creating an enduring curriculum for use in a residency educational program.

Start with curiosity

Perhaps one of the most underrated attributes of a physician is curiosity. That intrinsic drive to seek knowledge and gratify the mind with new information is crucial to engagement during education. Encouraging inquiry rather than supplying information can promote self-directed learning as well as generate research questions. Practice improvement is also included in scholarly activity; current processes or lack thereof are good subjects of study to the curious mind.

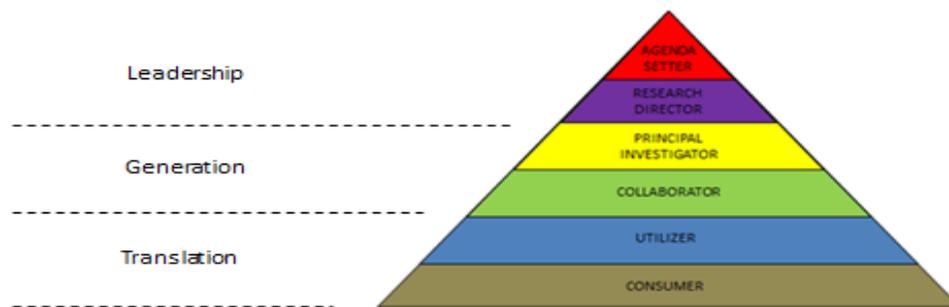
In our average day of practice an engaged and mindful physician could likely create many questions, particularly in a field as broad as family medicine. A colleague once recommended trying to write down at least one a day. During a three year residency, over 1,000 questions

might be generated. While many of those might be answered with a literature review, some may warrant further investigation to compile or create new information to share. Faculty modeling curiosity throughout the education process will support education and training, develop scholarly activity and may enhance practice through process improvement.

Build a Team with Research Roles

Throughout this guide you will be recommended to work with a mentor and build a team. All faculty, residents and practicing physicians should be reading and “consuming” current evidence. Our learners and faculty move up the research pyramid by starting to engage the use of evidence-based medicine directly in their practice and collaborate on scholarly projects. Beyond the truism that “many hands make light work,” having a team member experienced in clinical research (someone who has been a Principal Investigator or is a Research Director) allows your research to be in better alignment with current research trends. The Principle Investigator can be supported by our learners on projects and meet the goals of leadership who set the agenda and remove obstacles to enhance the teams experience.

Research Roles Pyramid



This pyramid depicts the spectrum of roles faculty can perform when it comes to medical research. The bottom two levels represent continuous learning about, and the translation of, new medical knowledge. All faculty participate in research through consumption of the literature and all those that provide patient care participate by being direct utilizers of research findings. The middle two levels represent actual participation in the generation of knowledge. Ideally, a robust number of faculty will actively collaborate in the research generation in order to produce broadly applicable findings. A smaller number, with significant experience and interest, will become principal investigators answering their own questions. The top two levels represent leading others in the generation of new knowledge. Those researchers with the most and broadest experience will become positioned to lead research programs or even to set research agendas for institutions and broad networks of researchers.

*Research Roles Pyramid image courtesy of Dr. Seehusen

Pursue your projects using the FINER criteria and “five components” pathway

A simple screen for clinical questions to pursue is the FINER criteria advocated by Hulley. Optimal research questions are: **F**easible, **I**nteresting, **N**ovel, **E**thical, and **R**elevant. Steps to perform meaningful scholarship include: 1. Begin with a scholarly question (using the FINER criteria); 2. Perform a systematic search for existing knowledge; 3. Gather, analyze and synthesize the data; 4. Present your findings. Following the chart below provides a mental model from taking your project from start to finish.

Type of Project	Begins with a scholarly question	A systematic search for existing knowledge	Gather data	Analyze and synthesize data	Present findings
Case report	What does this case add to the existing literature?	Literature search, discussion with experts	Collate previous cases, comparing and contrasting	Generate lessons learned, advice for other providers	Published paper, poster or oral presentation
Research	How are these variables related?	Literature search focused on prior research in the area	Outcomes data generated through scientific method	Statistical analysis of relationship between variables	Published paper, poster or oral presentation
Process Improvement Project	Can “X” outcome be improved by making “Y” change?	Literature search, discussions with peers, existing best practices	Outcomes data generated through scientific method	Analysis (may not be statistical) of relationship between variables	Presentation could result in publication (may need to get retrospective IRB approval)

Summary

We have dispelled the concern that only original institutional review board approved studies are acceptable. Our learners can start at a level that sets them up for success, in an area that speaks to their interests. Modelling curiosity will spark the learner’s intrinsic drive in a much more

satisfying approach than simply working to meet requirements. The flywheel of success encourages higher level engagement as the glass wall of trepidation is broken. Educators have the onus to encourage, coach and mentor via engagement in scholarly activity, and setting the example for our future colleagues. The recipes contained in the following chapters will help organize your approach to developing your residents and faculty team. The information spans creation of case reports to drafting investigational review board and grant applications. The book includes structural methods like creating a peer leader as resident research coordinator, which has been proven to increase production of scholarly activity. As Program Director for the Naval Hospital Jacksonville Family Medicine Residency Program, I have seen these recipes work, and am confident they will enhance your program!

Summary Points:

- ❖ Scholarly Activity contributes to the knowledge available to the discipline of medicine and is subject to peer-review
- ❖ Scholarly activity is a requirement of graduate medical education
- ❖ There is a wide range of scholarly activities that can be pursued and should be tailored to each learner's interests
- ❖ Curiosity should be supported and modeled to residents
- ❖ Use the FINER criteria and five component pathway to frame your work
- ❖ Remember that Flexner wanted physicians to do research because it encourages life-long learning and helps avoid stagnation via empiricism

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