

- **An investigation that addresses an unanswered question.** Ideally, this is a question that is particularly important to the student. Although the project may not answer the whole question, answering part of it, or moving a step closer to an answer are worthwhile goals. In quantitative research, a research question is usually a hypothesis that can be tested. In qualitative research, the question can guide further understanding of a topic and generate hypotheses and themes. Educational projects that develop a curriculum could also evaluate its acceptability and effectiveness. In this case, the project question could address what the participants learned. Quality improvement projects ask what current practices are, what practices should be used, and what is the impact of the quality improvement effort.
- **Contributes new information.** Background literature searches and experts in the field can be used to find out what is currently known about the question. For some questions, there is much existing research to synthesize. In these cases, good syntheses usually already exist. When there is much existing research, but no comprehensive or timely synthesis, a systematic review using meta-analysis or qualitative techniques could become a scholarly project in itself. In other cases, it is sufficient to have a good grasp of what is known and where the gaps are, and be able to describe it in the background section of the proposal and final report.
- **Uses methods that provide answers to the question.** Appropriate methods vary widely depending on the type of project. For bioscience projects, methods generally involve an experimental design. For health services research, several methods may be appropriate, such as analyzing a pre-existing dataset or conducting a survey. For quality improvement projects, methods using a Plan/Do/Study/Act cycle design are relevant.
- **Leads to results that can be interpreted, written up, and discussed.** Like the results and discussion sections of a research paper, a scholarly project includes a description and interpretation of results and places them within the context of the field. This means describing what the project adds to existing research, important things learned during the course of the project, limitations, and relevant unanswered questions that remain.
- **Will be prepared with a formal proposal.** Students will have a chance to develop their proposals during a 1-credit introductory course provided in the months before clinical block rotations. This course is designed to orient students to medically-related research and to develop their proposals in a stepwise fashion.
- **Does not have to be published in the *New England Journal of Medicine* or other journal.** Students must meet all benchmarks for scholarly projects in order to graduate. These include a final presentation at our Capstone event. We encourage submitting scholarly projects to present at meetings, and turning them into manuscripts for publication, but these are not required in order to pass! Similarly, simply helping a faculty member write up results that they obtained wouldn't constitute a scholarly project even if it were published.
- **Can include unconventional investigative projects, such as artistic or engineering.** The definition of "scholarly project" is intended to be flexible and we welcome creative nontraditional projects. If students want to do something that does not fit into the general framework, they should discuss the

project with the faculty concentration leads to help ensure that the project meets requirements to pass.

- **What wouldn't constitute a scholarly project?** Answering a question with a literature review that is not systematic and does not apply meta-analysis or another qualitative method is not enough. Helping a faculty member with his or her research project may not be enough—students should identify a discrete part of the project that is clearly their own. For example, a secondary analysis of collected data to address a question that isn't part of the main analysis could constitute a project. Presenting an educational curriculum alone is probably not enough—a formal description and evaluation of the curriculum would be needed.
- **Finally, if the student has a great proposal, but something happens and the project is in trouble, don't worry!** Project mentors and concentration leads are involved with each project and can figure out alternative strategies to address the question, or tweak the question so that it can be addressed. That's the nature of investigation—obstacles arise and success and learning come from how well we respond to them.