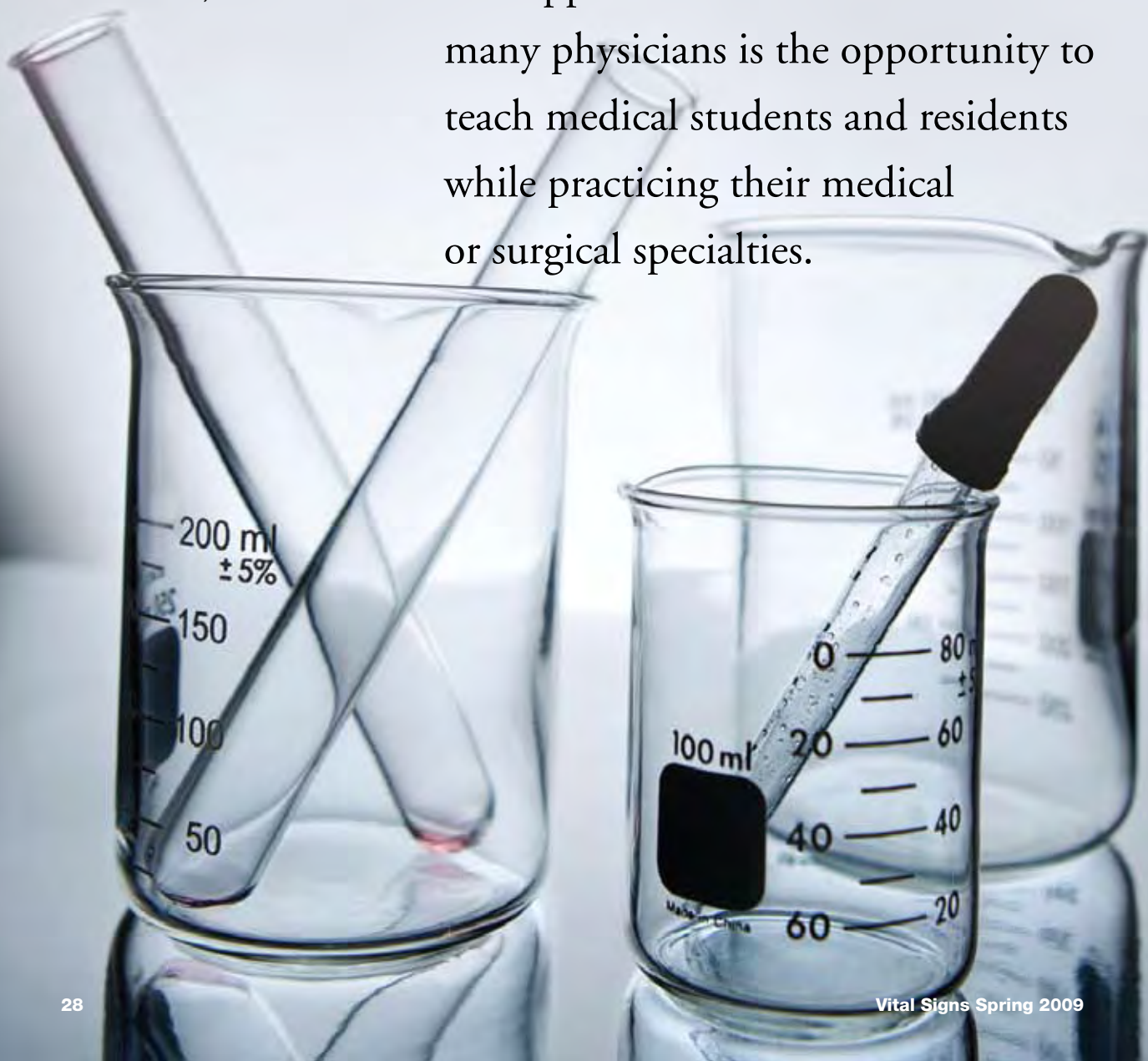


Getting started on your research: Practical advice for clinicians

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The appeal of academic medicine for many physicians is the opportunity to teach medical students and residents while practicing their medical or surgical specialties.



Once established as a clinician-teacher, faculty often become curious about the research component of the traditional academic three-legged stool (teaching, service, and research). Though strong in the first two areas, clinical faculty may feel a need for guidance and mentorship to develop their research skills.

Over the years, I have taught and collaborated with many clinicians as they pursued an interest in scholarly activity. In this column I offer some practical advice for clinician-teachers who are interested in research but may lack the experience (not to mention time and resources) to proceed with confidence.

In my experience, three characteristics distinguish those clinical faculty who are especially productive in their research activities. First, they are more *intrinsically* than *extrinsically* motivated. A salary increase or academic promotion (extrinsic motivators) may provide encouragement, but the drive to discover new clinical knowledge, answer important patient-related questions, and advance the practice of medicine or surgery provides a far stronger motivation.

Second, they recognize that *collaboration* increases *productivity*. Working with faculty colleagues, technologically savvy staff, medical librarians, research assistants, biostatisticians, and others who share your interests or possess unique skills or knowledge can allow you to accomplish far more than you might on your own.

Third, they exhibit two key personal qualities: *patience* and *organization*. Research has a natural rhythm that cannot be rushed, and it takes a methodical orderliness to manage tasks and challenges such as generating a hypothesis, reviewing relevant literature, planning a study design and research methods, obtaining Institutional Review Board (IRB) approval, implementing an

intervention (if necessary), monitoring data collection, analyzing data, and writing a manuscript.

Whether or not you possess (or care to develop) these characteristics, the following tips can help you produce sound research and enhance your scholarly activity credentials:

1 Focus. I am apprehensive when anyone tells me, “This research will produce four or five papers.” My advice: focus on your best research question, produce a quality study and an eloquent paper, and then go on to your second-best idea.

2 Be specific. Frame a research hypothesis (or question) that will be clear to the reader (or grant reviewer). For example, say, “Treatment X will result in fewer hospitalizations,” rather than “will produce better clinical outcomes.”

3 Don't be afraid to sail alone. Most of us will not be as fortunate as Telemachus in *The Odyssey*, whose wise guide (the original Mentor) told him, “The goal that has eluded you shall not do so for long. I am too good of a friend. I will rig a fast-sailing ship for you and sail with you myself.” The contributions of supportive faculty and resourceful staff can be invaluable, but you can certainly be productive without assistance if you commit to learn how research is done and carve out dedicated time for your work.

4 Develop a timeline. Research studies involve many steps and occasional setbacks. Establishing a sequence and schedule for the completion of tasks will keep you on target and give you an ongoing sense of accomplishment.

5 Ask an expert. In reviewing the literature, you may discover researchers with valuable insights related to your study goals. Don't hesitate to contact these experts for advice—most will be flattered to have a distant colleague interested in their work, and they often will be pleased to advise you.

6 Consider an exploratory study first.

“Starting small” with an exploratory study involving a few subjects may not provide the statistical power to make inferential claims, but it will allow you to do a preliminary test of your hypothesis and research methods (and perhaps improve both), and to determine the number of subjects needed for a large-scale investigation.

7 Start your manuscript early.

Dr. Alex Roche, Fels Emeritus Professor of Community Health and Pediatrics at Wright State, once told me that research isn't research until it is published. With this in mind, become familiar with report guidelines for specific research designs, and start your paper before data collection is complete. While data gathering proceeds, you can assemble relevant literature and incorporate results from these studies in your *Introduction*, complete the *Methods* section of your paper, and construct blank tables for your *Results*. Doing this without your data will also help you think and write in an original and clear manner, and you will be better prepared to attack the *Discussion* and *Conclusion* when all the data are in.

8 Research for the right reasons. While extrinsic motivators have their place, scholarship in medicine and surgery is best when inspired by the goals of advancing science and improving patient care. Winston Churchill said it best: “Neither look for nor expect gratitude, but rather get whatever comfort you can from the belief that your effort is constructive in purpose.”**VS**

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