

**LETTER TO THE MJM****STUDENT JOURNALS: FACILITATING  
MEDICAL STUDENT RESEARCH AND  
PHYSICIAN-SCIENTIST DEVELOPMENT**

Dear *MJM*,

There is growing concern over the declining number of physician-scientists over the last two decades. Although James Wyngaarden, former National Institutes of Health Director, called attention to this issue more than 25 years ago (1), history tells his concerns were mostly ignored. The number of physician-scientists decreased by more than 6% from 15,377 in 1980 to 14,434 in 1997. In the same period, there was almost a doubling of physicians reporting patient care as their primary career from 376,512 to 620,472 (2), thus confirming a declining interest among physicians to perform biomedical research as their primary professional activity, which is the general definition of physician-scientists. Physician-scientists generally include those who conduct basic science, disease-oriented, and/or patient-oriented research.

Does it really matter if physicians play a small role in medical research? After all, there is a growing number of competent Ph.D. scientists performing clinical research (2). Dr. Leon E. Rosenberg offered a response, "It may be true that a medical education does not adequately prepare one to answer scientific questions, but it is the ideal setting in which to ask them (3)." Physicians ask questions that reflect their experiences based on direct care of patients. They also act as the link between bench and bedside. Physicians can communicate their work with both scientists and other health professionals more directly than any other group. At the end of his article, Dr. Rosenberg proposed five recommendations that addressed the declining number of physician-scientists, one of which was establishing and maintaining a supportive environment in medical schools, which encourages and rewards students committed to research (3).

Modern medical schools incorporate both scientific method and critical appraisal into their traditional basic science/clinical education. This is important to training future physicians to practice evidence-based medicine (EBM). The future of EBM does not rely solely on learning methodology but includes the active participation of physicians in research. Extracurricular research has long been encouraged in medical schools and is recognized as an important determinant in the decision to continue postgraduate research (4,5). Furthermore, high quality medical student research is publishable in peer-reviewed journals and can

contribute considerably to the scholarship of a medical faculty (6,7).

Since 1997, there has been a small but encouraging increase in interest in research as part of their careers among medical students (8). It is important to continue the efforts made to maintain this trend and to support medical students in their endeavours to become physician-scientists. And this is where student journals play a critical role.

Although student journals have long been recognized to offer opportunities for students to express their ideas, the impact of student journals to spark research interests is often understated. Student journals have the unique opportunity to engage students at a more personal and understanding level. They recognize that for many students publishing their first article is a daunting task. Many students can spend numerous hours writing and revising their submissions to leading journals only to have their confidence crushed by a rejection letter. The mandate of student journals is particularly sympathetic to submissions from students who are embarking on their research careers. Even if they have no scientific data to submit an original article, students can make contributions in other forms such as letters and commentaries. Critical appraisal letters can often demonstrate a student's competence in using the scientific method and are likely to stimulate interest in research and academic medicine (9). Many students have published their first articles in student journals. Indeed, student journals, including the McGill Journal of Medicine, have often been the launching pad for those aspiring to research careers.

Many student journals are advocates for high quality medical and scientific research, and devote many of their pages to scientific evidence in the form of original research and review articles. However, it is equally important to maintain a balance in medicine and recognize that not all aspects of medicine lend themselves to rigid study. The art of medicine still involves an exchange of ideas and opinions. Furthermore, many student journals provide eager students the unique opportunity to be part of an editorial board in which to learn and practice their critical appraisal skills. A balanced approach to medical science will enable student journals to encourage critical thought, student research, and willingly, the development of future physician-scientists.

Sincerely,

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**REFERENCES**

1. Wyngaarden JB. The clinical investigator as an endangered species. *N Engl J Med* 1979; 23:1254-9.
2. Zemlo TR, Garrison HH, Partridge NC, Ley TJ. The physician-scientist: career issues and challenges at the year 2000. *FASEB J* 2000; 14:221-30.
3. Rosenberg LE. Physician-Scientists-Endangered and Essential. *Science* 1999; 283:331-2.
4. Segal S, Lloyd T, Houts PS, Stillman PL, Jungas RL, Greer RB. The association between students' research involvement in medical school and their postgraduate medical activities. *Acad Med* 1990; 65(8):530-3.
5. Jacobs CD, Cross PC. The value of medical student research: the experience at Stanford University School of Medicine. *Med Educ* 1995; 29(5):342-6.
6. Wehrens XH, Leiner T. Publications from extracurricular research. *Lancet* 2001; 358(9284):846.
7. Cursiefen C, Altunbas A. Contribution of medical student research to the Medline-indexed publications of a German medical faculty. *Med Educ* 1998; 32(4):439-40.
8. Ley TJ, Rosenberg LE. The physician-scientist career pipeline in 2005: build it, and they will come. *JAMA* 2005; 294(11):1343-51.
9. Hanratty B, Lawlor D. Getting letters published in journals is good aim for medical students. *BMJ* 1999; 319(7218):1198.

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