COMMENT

Keeping Medicine and Science Together

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The recent publication of the symposium "Career Planning for Experimental Biology, Biomedical, and Physician Scientists" (1) has focused many issues facing those interested in the fate of the physician-scientist. The symposium merits a response and further steps toward the support of this invaluable resource.

Changes in health care financing and the "secularization" of medical training and practice are altering the culture of American academic medicine (2). One of these cultural changes is the restructuring of the biomedical research paradigm to favor the development of increasingly disparate careers for physician-scientists and nonphysician-scientists (3). These changes are often said to be due to financial exigencies, but because of fundamental changes in career expectations, academicians increasingly accept them. This is leading to a downward spiral for science in American medicine (4).

Until now the academic medical paradigm incorporated parallel paths for clinician-scholars and clinician-scientists. This was most deeply rooted in the cognitive or medical specialties (medicine, pediatrics, *etc.*), perhaps in the past because the distraction of very high earnings was infeasible. Medical specialty trainees were exposed to the experimental method and research thinking from the earliest moment. This was less the case for the procedural or surgical specialties in which great commitments of time and effort could yield great earnings. Moreover, surgical training tended to isolate research time rather than incorporating it into the everyday fabric of practice. However, the advent of noninvasive and microinvasive technologies has brought both opportunities for income generation and weakened bonds to research in the cognitive specialties.

Perhaps an equally powerful driver of these changes is the development of a shift-worker mentality among clinicians. The roots of this phenomenon largely lie in the reweaving of our societal fabric to include two-earner families, issues regarding "quality time" for the family (5), and the doctor's reduced role and responsibilities in health care management. Shift-worker mentality also militates against the ability to balance a clinical and research career. Since the birth of various Great Society programs under President Lyndon B. Johnson, there has been a continual increase of highly trained, professional scientists who make a research career far more competitive and less available to part-time researchers (3). Along with the fiscal demands of the academic medical enterprise, this competitive atmosphere is eroding American academic medicine as an integrated community of clinicians and scientists. There are so many centripetal forces in play that the bond between clinician/nonclinician-researchers and clinician-scholars is in serious jeopardy (4).

If we agree that separation of the clinical and research enterprises is not healthy for the teaching and development of American medicine (6), we must consider what to do to counter these forces and whether there is time left to reverse the inroads that have already been made. If we agree that the task is meritorious and there is time to accomplish it, we must develop a plan that forges and enhances bonds between clinician-scientists and laboratory scientists in academic medicine. We need to formalize the common interests of both sides in the development of prospective

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academic medical candidates. We must begin to renew the partnering of science with medicine as soon as possible. We must find means of supporting such bonding until all academicians internalize it.

We can do all of this if we find the formulation and resolve necessary for a long and deep overhaul of medicine's professional formation. Success in this task will be one of the keys to continuing the ascendancy, rather than the decline, of American health care; it is that important. Respected and powerful professional groups have understood that American medical academia is on the line over the fate of the clinician-researcher and have reported this widely.

The National Institutes of Health (NIH) has recognized the problem and made great efforts to support clinician-researchers, both by debt relief and increasing training funds to make physician-scientists more competitive for research dollars. Efforts are under way to control the burden of frivolous suits and jury awards that threaten to swamp the academic enterprise. But the forces pulling us apart and putting clinicians in clinical chutes and silos are tremendous, insidious, and increasingly more institutionalized (4). These forces are felt even before the potential student considers medical school. They are intensified by the cost of higher education and the burden of debt that the student carries from the get-go. In addition, the pressures to produce in the clinic plus the spread of the shift-worker mentality are driving a dumbing-down of medicine (4). An example of the effects of this trend is seen in the tendency to accept randomized clinical trials, *per se*, rather than balancing them against the value of observational studies and laboratory research findings (7).

We must fight these forces before they reduce medicine to a job rather than a profession. The task is formidable. Bringing interested, prepared, and rewarding clinicians to the scientific partnership will require the earliest possible campaign of education and screening, as well as resuscitation of the meritocratic aspects of the selection and training of potential academicians. More times than not, this will have to be started, even accomplished, before potential medical academicians-to-be have defined their goals. Indeed, the process should intend to define those goals. The destructive forces described above are much less evident in the world of the early-committed researcher, clinician or not. Training programs and other funds for postgraduate education are plentiful. Because trainees have not had high incomes that might become reduced, finances are not so high on the radar. The scientist's work ethic is still strong, probably because the structure of American biomedical research remains a meritocracy. Therefore, it seems that the approach to getting researchers into the mindset of partnering with the clinician is more tractable: it depends on showing scientists that partnering with clinicians will provide new views of research that will allow greater access to support for their scientific work.

How do we develop a method to achieve these goals? What is above is merely the framing of the problem. The next step is a formal statement of this vision and the development of a mission. This is the role that the Society for Experimental Biology and Medicine can serve. As always, the devil will be in the details. But, the cost of not trying to solve this schism in the academic medical culture of America is too great to be put aside by faint heart or self-interest. We, the leadership of the enterprise, have been given the privilege of tackling a great problem. The danger is too real and near to be ignored. The cost of inaction is too great. We cannot shrink before this task. The Society for Experimental Biology and Medicine is an ideal venue for the struggle. "*Aux Armes!!*"

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