“Americans don’t do science anymore” is an actual quote from the middle of a recent Washington Post editorial. The author’s primary concern related to the sudden decline in applications from and enrollment of foreign students in undergraduate and graduate programs at US universities. Cumbersome visa procedures, tightened rules for visa approvals, and the increasing attractiveness of other countries’ educational systems are cited as contributing to the post-September 11 decline.

Certainly graduate programs and careers in the pharmaceutical sciences had been attractive to students in those countries in which the declines have been most dramatic, notably China and India. Many of our programs have grown reliant on this source of talent as it has become increasingly difficult to entice native-born/United States-born pharmacy graduates to pursue doctoral studies in the pharmaceutical sciences.

In the article, Zakaria uses National Science Board data to articulate the scientific “melt down,” which is more serious than just the question of whether we can continue to attract the intellectual elite among students from across the world to our institutions of higher education. In 1975 the United States ranked third in the proportion of college students majoring in science and engineering. Today we rank 17th among developed nations. Couple this with additional general concerns about the college readiness of today’s high school graduates, and health professions schools have more than just a little cause for discomfort.

Our triple threat is the weakening of our graduate and research programs, our inability to recruit and retain qualified faculty members, and an erosion of the pool of candidates for all health professions programs. As that pool shrinks, all 3 threats become increasingly menacing.

My own awareness of our vulnerabilities has sharpened over the past several weeks; first, when I reviewed an article by Norman1 and second, when I strolled through the exhibit hall at the annual meeting of the American Association of Pharmaceutical Scientists (AAPS). Norman reviewed the evidence, albeit limited, that affirms the essential role of basic science education and understanding in clinical medicine. The AAPS meeting invoked in me what I came to call “scientific humility” as I worked to absorb the complexity of the evolving sciences of drug discovery, development, and clinical use. My own undergraduate exposure to pharmaceuticals and other pharmaceutical sciences seemed to have evaporated in relation to the terms and technologies on display in the mammoth hall.

My first reaction to the AAPS meeting was the question, “Are our schools and their faculties truly able to keep pace with the complexity of our sciences in a way that insures their continued competitiveness?” Further, do we have the requisite scientific manpower to equip the next generation of medication use specialists, our PharmD graduates, with the fundamentals that insure they understand the mechanisms of disease and the agents used to prevent and treat them? If not, then our educational programs at best train technically competent pharmacists rather than educate clinical leaders and specialists.

Norman maintains that basic science understanding is even more important to treatment decision formulation than to diagnosis in medicine. Studies suggest that specialists in medicine access and apply more basic science reasoning in their approach to patient care than first- and second-year medical residents operating from a more generalist base of knowledge. As pharmaceutical care is all about formulating treatment strategies based on a fundamental understanding of mechanisms of disease and pharmacotherapy, a reasoned hypothesis is that basic science possibly is even more fundamental to pharmacy practice than to diagnostic medicine. The author acknowledges the challenge of conducting rigorous research to test such a hypothesis, but it is nonetheless worthy of consideration.

Some of the issues and solutions to the looming threats are far too large for pharmacy education to address alone. Zakaria was essentially calling upon soon-to-be-confirmed Secretary of State Condoleezza Rice to address visa restrictions and America’s image abroad. Perhaps there is a broader role in international education that the American Association of Colleges of Pharmacy (AACP) can play. The 2004–05 Argus Commission is examining this.

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Enhancing the pool of prospective students considering pharmacy education and practice remains a top priority of the AACP. Evidence that the basic pool of future pharmacists is in jeopardy at the undergraduate levels makes the October 2005 debut of the PBS documentary on pharmacy education and practice even more timely. The 1-hour program and its 20-minute derivative program are aimed at the high school and college audience and will open viewers’ eyes to how enticing and diverse the career opportunities in our profession are today.

Ensuring that the curriculums in our schools and colleges of pharmacy adequately cover basic science and that our faculty members have the requisite knowledge and scholarly experience to deliver the curriculum competitively is the responsibility of us all. The science sections of AACP made this clear in a joint submission of comments to the ACPE that suggested strengthening of the basic science sections of our contemporary accreditation standards and guidelines.

I, for one, cannot just accept that “Americans don’t do science anymore.” The stakes to our health care system, our economy, and many other essential components of our society are simply much too high.

REFERENCES