

Integrative inquiry

By Stephen P. Spielberg, M.D., Ph.D.

In 1796, when Dr. Nathan Smith proposed establishing a “medical school in this college,” he could hardly have envisaged just how critical that affiliation would be. His vision for Dartmouth Medical School has even more pertinence in today’s complex world, where medicine interacts with nearly all aspects of modern life. In the 21st century, we stand in awe of Dr. Smith’s accomplishments and benefit every day from the fact that DMS is “in this college.”

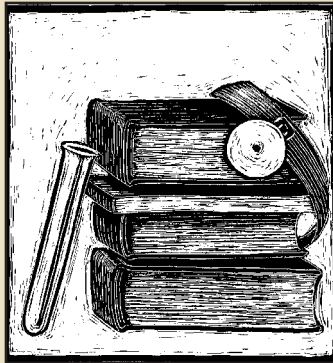
For example, health care has assumed a huge role in our economy. A medical school, to have optimal educational and research impact, is well served by having an outstanding business school as part of its larger academic environment. We have seen increasing activities between DMS and Dartmouth’s Tuck School of Business—from an M.D.-M.B.A. program to seminars on business and medical ethics. Faculty from each school teach across traditional barriers and work together on new approaches to making our health-care system more cost-effective, while providing improved care for those in need.

Initiatives: Similarly, DMS has many interactions with another applied science—engineering. Many M.D.-Ph.D. students are doing their doctoral work at Dartmouth’s Thayer School of Engineering. Research collaborations with Thayer faculty have led to major developments in artificial joints, novel approaches to advanced imaging, and new initiatives in cancer research.

With the Arts and Sciences faculty, too, there are unique opportunities that differentiate us from many other universities. And all these associations are facilitated by the “right-sized” nature of Dartmouth and the remarkably collaborative nature of our faculty.

Medicine and science are not simple, and their impact on society can be multifaceted. Let me offer the example of Fritz Haber, a German scientist who won the Nobel Prize for Chemistry in 1918 for discoveries related to nitrogen fixation. These discoveries led to a major advance in fertilizer production and greatly expanded agricultural yields worldwide. The process allowed Germany to produce more food during World War I—probably prolonging the war. Nitrogen fixation also aided the production of explosives (as, indeed, did the science of Alfred Nobel himself). So Haber’s science helped reduce starvation but also served the ends of war. Furthermore, excessive use of nitrate fertilizer is a major source of environmental pollution. Hero? Villain? Like so many examples, the answer is not straightforward.

Ideal: Yet we must not shy away from complexity. A great institution of learning such as Dartmouth College, together with DMS, is an ideal setting for going beyond simple answers and exploring the com-



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plex intersection of science and society. The challenges of modern science, research, and medicine are best advanced in an environment driven by broad excellence in learning and open discourse.

It is possible to have a medical school independent of a college or university (and vice versa). Yet the advantages of synergy are very real. Many DMS faculty teach Dartmouth undergraduate courses, on

topics from ethics to world hunger. Increasingly, programs concerning international affairs involve the Dickey Center, the

Tucker Foundation, College departments, DMS, Thayer, and Tuck. Students benefit from multiple opportunities in the classroom and in the field to understand the intersections of science and technology with political and economic stability. Numerous undergraduates have productive work experiences in DMS laboratories. Medical students mentor or work with undergraduates in a variety of community service projects. The list goes on and on.

Why is all this important? Stories about medicine and science are in the headlines daily. They send confusing, sometimes incomprehensible messages about benefits, risks, regulations, and resources. Dartmouth students (no matter what they’re studying) are likely to be leaders in whatever endeavor they pursue. Whether they go into business, law, politics, education, or science, their lives will intersect with medicine. The business executive may be responsible for employee health benefits, for example. So all Dartmouth graduates need to understand how science and medicine “fit” into society. Their knowledge must go beyond the headlines, since they will grapple with our most difficult problems and our most exciting opportunities.

Intersections: These intersections are important for medical students, too. The language we use to discuss science has become more impenetrable, to our detriment. In reality, medicine struggles with some of the same issues that literature, art, music, philosophy, and religion do—how to live a good life, how to cope with mortality. Medicine’s ability to help and connect with patients is enhanced if we minimize jargon and expand on our experiences beyond medicine.

We cannot predict what the future will bring, but we know that we must create the kind of medical school where students learn in an atmosphere of discovery and dedication and where faculty follow with zest their career paths in education, research, and patient care. A great school has faculty pursuing many independent goals, while also dedicated to their joint stewardship of the institution as a whole. I believe that DMS is such a place. Being a part of Dartmouth College raises our horizons beyond medicine, to an integrative examination of the intersection of multiple areas of knowledge and inquiry. This is the right atmosphere to challenge all our students, undergraduate and graduate, to be leaders, whatever their chosen fields. ■

“For the Record” offers timely commentary from the dean of Dartmouth Medical School. Spielberg, a pediatrician and a pharmacologist, is in his second year as DMS’s dean.