

## Virtual Mentor

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### MEDICAL EDUCATION

#### **FlexMed: A Nontraditional Admissions Program at Icahn School of Medicine at Mount Sinai**

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Early in the twentieth century, before the era of antibiotics and the discovery of DNA, students were required to take biology, chemistry, organic chemistry, and physics in order to apply to medical school. Today, in the era of personalized genome sequencing and the unraveling of the mysteries of HIV, students are still required to study biology, chemistry, organic chemistry, and physics in order to apply to medical school.

Medicine in the twenty-first century is global, digital, personalized, genomic, and team-based. In addition, our national social conscience has finally been awakened in the form of the Affordable Care Act, and this will require a very different kind of physician to enter the ranks of the medical profession. Despite all the evidence that clinical medicine and biomedical science have evolved more rapidly than practically any other field of study, very little has changed in the way we prepare students for medical school.

The prevailing opinion among American medical educators is that current premed preparation has little relevance to clinical care, biomedical research, or societal needs [1-3]. The century-old model of premedical preparation subjects smart, innovative, motivated students from across the broad spectrum of our society to an educational experience that is not focused on—and may even detract from—the development of self-directed, collaborative learners. Such a model does not nurture the attributes medical students will need to care for the underserved, perform breakthrough research, and fix our health care system. And it has engendered “premed syndrome”—a culture that rewards intense competition for grades and sacrifices excellence in learning for excellence in test taking. Organic chemistry has developed a reputation as the course that weeds out those who cannot memorize vast amounts of information and regurgitate it for an exam. But is this a necessary skill when the entirety of medical knowledge now fits in the palm of one’s hand, and the drive to learn new material and the ability to synthesize information and make connections are far more important than one’s ability to recall established facts?

This hyperfocus on memorizing, test performance, and grades leaves very little time for important intellectual pursuits that can help students become better doctors. Subjects such as bioethics, health policy, and biostatistics are critically important to the practice of modern medicine, yet are sorely neglected.

Perhaps most tragic is the impact that this preparation has had on our ability to attract and recruit a diverse pool of applicants to medicine. Research has shown that the required courses with the least relevance to medicine, such as organic chemistry, have the greatest influence in “weeding out” students from underrepresented backgrounds; some struggle with the coursework, but many simply avoid taking these courses altogether. There is also a controversial but growing body of evidence that suggests that the MCAT itself may be a socioeconomic, rather than intellectual, barrier. Many students simply cannot afford the time and money required to take the preparatory courses necessary to achieve the highest possible score on the MCAT.

In addition, the weight many medical school admissions committees give to MCAT scores significantly undermines what would otherwise be a more holistic approach to evaluating candidates for medical school.

The MCAT is a valid and reliable examination that has a high degree of predictive value for future medical school performance. Much of the MCAT’s importance in admissions decisions, however, has to do with the extent to which MCAT scores have become a key variable in determining a school’s national ranking by the *US News and World Report (USNWR)*. The fact that an incoming medical school class’s median MCAT score is used as part of *USNWR* ranking points to a narrow, perhaps skewed, view of who will make a good doctor. For example, there is ample evidence that all students who score 30 or above on the MCAT have a 90 percent or better chance of “unimpeded progress” in their medical school career. Can we really make the case that a student with an MCAT score of 35, and a 94 percent chance of unimpeded progress, will necessarily be a better doctor? And yet the *USNWR* rankings pressure schools to give preference to the applicant with that 35, even if a more holistic review reveals that the student with the lower MCAT is more well-rounded, from an underrepresented group, or more accomplished in other activities [4].

We need to focus on what’s missing from premedical education: academic rigor with less grade-driven competition, flexibility and opportunities for self-directed learning, and coursework that is more relevant to and more closely aligned with society’s needs.

Twenty five years ago Nathan Kase, who was dean at Icahn School of Medicine at Mount Sinai at the time, created the Humanities and Medicine (HuMed) Program at the school to address these concerns. Humanities majors were recruited in their sophomore year of college. If accepted, they were exempted from taking the traditional science requirements or the MCAT. They had to complete their undergraduate coursework and spend one summer at Mount Sinai studying clinically relevant science, and they had the option of taking up to two years off after college. The hope was that they would acquire a broad and diverse education, avoid premed syndrome, and perform as well as their peers despite not having the same science preparation.

We now know that these students are indistinguishable from their peers in almost all outcomes that are tracked in medical school and beyond. This includes receipt of clerkship honors, membership in Alpha Omega Alpha Medical Honor Society, distinction in research, school leadership roles, and membership in the Gold Humanism Honor Society. There is a small but statistically significant (six-point) difference in Step 1 Board scores, with HuMeds scoring lower than their peers. We did find an encouraging tendency toward pursuing general medical specialties and psychiatry among HuMeds, although this finding was not statistically significant [5]. At the very least, HuMed has taught us that medical schools do not have to be so risk-averse when it comes to establishing nontraditional pathways to admission that are aligned with a school's particular missions, culture, and priorities.

Taking these lessons to heart—and eager to engender meaningful reform in premedical education—we at Mount Sinai have created FlexMed, an early assurance program that is modeled after HuMed but is open to students of all majors. FlexMed students are not encumbered by many of the traditional science requirements, they are free to challenge themselves academically without fear of jeopardizing their grades, and they are not required to take the MCAT. They are required to complete coursework in ethics, health policy, and statistics; if they choose not to pursue a science major, we will provide them with basic coursework in biochemistry, cell biology, and genetics prior to matriculation. We believe that these are the sciences that will be crucial to the future of health care and biomedical research.

In our first recruitment season we received approximately 750 applications for 35 spots, from over 180 different colleges across the country. A preliminary review of the applicant demographics shows more racial and ethnic diversity than in our typical applicant pool, as well as a larger number of students from nontraditional majors, both in the humanities and in computational sciences like physics, engineering, mathematics, and computer science. FlexMed has allowed our school to focus more on evidence of leadership and exceptional performance outside the classroom, in areas like independent research, advocacy and social justice, music, athletics, and achieving success despite significant socioeconomic barriers.

## References

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