The Science Tradition

IN 2007, after it was announced that I was to be the next president of Wellesley College, the very first wave of congratulatory notes and e-mails I received came from science colleagues across the country and around the globe. I was surprised to learn how many of these contacts had connections to Wellesley; I was even more surprised at the additional number that had connections to other small liberal-arts colleges.

What I quickly came to realize, of course, is that liberal-arts colleges like Wellesley are the quiet foundational underpinnings of our society's successful science enterprise.

In the last 20 years, more than one in five American Nobel laureates in chemistry, physics, and medicine attended liberal-arts colleges. Such statistics lead us to believe that liberal-arts graduates are disproportionately represented in the leadership of the nation's scientific community.

Having spent my own undergraduate and graduate years, as well as my entire pre-Wellesley academic career, at large research universities, I remain intrigued by the fact that liberal-arts colleges yield a disproportionate number of students who pursue advanced degrees in science and engineering. In fact, the National Science Foundation places Wellesley on its list of the top 50 schools in the United States producing the highest proportion of students who go on to earn doctoral degrees in these fields. From 1997 to 2006, 381 Wellesley alumnae—or 6 percent of our graduates—earned doctoral degrees in science and engineering.

Over the last 10 years, more than 470 Wellesley students or young alumnae pursued medicine, dentistry, or veterinary medicine, and there has also been an increasing interest in public-health careers. Among our alumnae, 16 percent work in science-related fields, including medicine.

Indeed, Wellesley has a long tradition of serving as a kind of secret foundation for budding scientists. From the beginning, College founder Henry Durant insisted that a Wellesley education include chemistry and physics requirements—this at a time when science was not a major part of most undergraduate colleges. Today, Wellesley College is home to the second oldest physics lab in the country.

President Bottomly has launched a new blog—"The HKBlog"—which can be found at blogs.wellesley.edu/president/.

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—President H. Kim Bottomly

Producing doctors and scientists may be one of Wellesley's quieter traditions, but it is a long-standing one, and it is one we must maintain. It is undoubtedly good for our students, who have the benefit of an excellent science education in tandem with a rigorous and inspiring liberal-arts curriculum. It is undoubtedly good for society, which needs these liberal-arts-educated minds, and needs more women in these fields.

It is also undoubtedly more complicated these days.

The number of U.S.-trained scientists and engineers is in decline, and so we must feed the pipeline. While we can't control the early pipeline that encourages middle-school girls toward STEM fields (science, technology, engineering, and mathematics), we must ensure that our science-inclined undergraduates (especially first-year students) remain excited about the discipline. To do this, our country's science pedagogy needs to change. I would argue that the larger research universities could learn a great deal from us. Small liberal-arts colleges thoughtfully engage students in the research enterprise. Certainly, this is true for Wellesley, where faculty provide myriad opportunities, early on, for students to do important research alongside them. Oberlin College conducted an eight-year study of 50 liberal-arts colleges and found that of the 7,000 articles published by faculty, 30 percent were co-authored by undergraduate students. At research universities, that number is less than 1 percent.

Yes, we need practicing scientists, but we also need science majors populating all careers; science needs to be a more integral part of the liberal-arts experience. After all, many of the greatest challenges we face in this century will require science expertise and the ability to link that expertise to expertise in other fields. Imagine a world in which science majors from liberal-arts colleges become attorneys and accountants, businessmen and bankers, politicians and poets, journalists and judges. I guarantee it would be a smoother-running world.

Actually, that world may be closer than we think. At the Alumnae Achievement Awards dinner in February, I had the pleasure of talking to a Wellesley student, a neuroscience major, who was seated at my table. Over dinner, she told me about her plans for a future career in marketing.

A neuroscience major who wants to work in marketing? This time, I wasn't the least bit surprised.

H. Kim Bottomly

RICHARD HOWARD