

Charles M. Vest

"Openness, Opportunity and Security in Universities: A National Challenge"

Address to the National Association and College and University Attorneys

Boston, Massachusetts

26 June 2002

INTRODUCTION

We have all just finished an academic year that began in tragedy. The thousands of deaths in New York, Washington, and Pennsylvania have changed our outlook in profound ways. The ramifications will be with us for years to come.

The attacks of September 11 did not pave the way only for a military response. They instantly changed America's relationship with the rest of the world. They challenged our very concepts of citizenship, civil liberties, and openness.

We will all struggle with these matters together in the months and years ahead. They have no simple answers, and they hold grave dangers. But they also provide opportunities to think about how we might define and achieve the security of this nation – and this world – in new ways.

As we consider opportunity in the context of a post-9/11 world, we find ourselves asking questions that have arisen time after time in our modern history:

- To whom is opportunity available?
- How open should our society and institutions be?

OPENNESS AND OPPORTUNITY

Each spring, my wife Becky and I host a dinner for the men and women who are retiring from the tenured ranks of the MIT faculty. These are always extraordinary gatherings of talented and accomplished colleagues – people who have defined MIT and have helped to shape their scholarly and professional fields.

As I survey that room each spring, I realize how much America has benefited from being open to people from other countries. And I am reminded that my colleagues and I are fortunate to spend our lives in an institution that aspires to meritocracy – one committed to selecting and advancing its people on the basis of their talent and accomplishment rather than wealth or nationality.

Now, some might say that the diversity of our university's retiring faculty represents nothing more than the passing of an era . . . that I am simply observing the end of the intellectual migrations from Europe that were associated with the turmoil of World War II. But there is more to it than that. The sustained excellence of America's colleges and universities is due in very large measure to the fact that we have welcomed scholars from other nations.

The recent Nobel laureates on the MIT Faculty include people born in Japan, India, Mexico, Italy and Germany, as well as the U.S. Most of them came to this country as graduate students. Or consider our Institute Professors, the dozen or so faculty members who have achieved the highest faculty rank at MIT. They were born in the United States and in Belgium, Italy, Mexico, Israel, and China. Any of our great universities would offer a similar lesson.

The fact is that America has always been a nation of immigrants, and we have long been a land of opportunity. Those who have come from around the world to study here have contributed greatly to our society and to our institutions. Many have stayed and built our nation. Some have returned to the land of their birth, taking with them the knowledge and skills learned here. They also have taken with them a better understanding of what is good in this country, its people, and its institutions. And all have contributed, by their very presence, to the education and quality of experience of their fellow students.

And let me also note the fact that MIT is blessed with extraordinarily talented, accomplished, and motivated undergraduates – many of whom are the sons and daughters of immigrants to America. As we strive to make all who live in this country safe from those who would harm us, we should not let our fear close the door to our own opportunity. We need to recognize the cost to future generations if we were to become too zealous in tightening access to our colleges and universities.

PULLING OUTWARD / PUSHING INWARD

Research universities today are subjected to orthogonal forces. Concerns about export controls and terrorist dangers are pushing us inward and threatening to isolate us. Yet globalization and communication technologies such as the World Wide Web pull us outward, into a broader and more instantaneous interaction with the world. The balance of response to these forces is complicated and critical – perhaps even of historic importance. This balance was emerging as an issue long before September 11, 2001, but now it is absolutely at center stage.

SERIOUS STUDENTS

The issues facing our colleges, and especially our research universities, derive from several sources, most obviously:

- Presidential Directive No. 2, on "Combating Terrorism through Immigration Policies," promulgated last October;
- The Patriot Act; and
- The Border Security Act.

Additionally, various agencies such as the Department of Defense are actively reviewing their policies regarding the conduct of research and access to research techniques and findings.

Finally, the Export Control Laws and the International Traffic in Arms Regulations (ITAR), and their application to university research, have been under review and revision since well before last September.

Flowing through all of these policies and legislation are three primary issues:

1. The tracking of international students who have been issued visas to study at U.S. colleges and universities;
2. A mandate to define "Sensitive Areas of Study" for which the State Department should not grant visas to students from certain countries; and
3. The need to appropriately secure scientific materials and research results that might be used by terrorists.

Despite the seemingly endless editorial and journalistic commentary to the contrary, the university world is essentially united on the need to track the basic information about international students and scholars – the so-called "directory information" – and on the mechanisms to do so. Universities like MIT have in fact met their obligation to provide this information to the INS for several years. The issue is that there has been no functional computer system to maintain and utilize this information. As you know, we have had a flow of paperwork back and forth among the INS, the State Department, and the universities that is frequently 6 to 18 months behind. The world learned this when one of the identified terrorists received approval to study at a flight school long after his suicidal mission on September 11.

Let me cut to the quick. We need to get on *post haste* with implementation of the new system, known as SEVIS – the Student and Exchange Visitor Information System – which will allow effective tracking of the “directory information” for international students and scholars. There should be no excuse for not knowing whether such visitors are undertaking the studies for which their visas were issued.

Essentially every higher education association last week signed a letter supporting this system, while expressing concern that the compliance deadline of January 30, 2003, is probably unrealistic, and recommending certain changes in details regarding the imposed costs and needed flexibility of the system.

The Presidential Decision Directive on Homeland Security of October 29, 2001, called for measures to end certain abuses of student visas, and to “prohibit certain international students from receiving education and training in sensitive areas of study, including areas of study with direct application to the development and use of weapons of mass destruction.”

This directive, although its aim is well understood, has led to considerable worry on the part of many of us in academia. I am among those who worry about it. There were visions of an overly simplistic process, banning foreign students from certain majors or even individual classes. Many of us have also been concerned about its effectiveness, because one of the bitter lessons we have learned is that a determined terrorist need not resort to sophisticated technology, and the identification of what knowledge might be put to nefarious uses is virtually impossible.

It is my view, however, that the Bush Administration is moving toward implementation of this directive in a thoughtful and careful manner. Last month the Administration announced the creation of a new Interagency Panel on Advancing Science and Security, or IPASS, that will provide a new level of review of specialized visas, including those used by students, postdoctoral students, and researchers.

What will trigger such reviews? These reviews, by which the meaning of "sensitive areas of study" will be developed, will be triggered when visa applications are received from citizens of countries known to sponsor terrorism who want to pursue study or research in specific topics of concern that are "uniquely available in the United States"

The criterion of unique availability in the U.S. . . the emphasis on weapons of mass destruction . . . and the use of a substantial multi-agency review panel . . . seem to me to form the basis of a sensible framework for approaching this complex issue.

The details of the protocols are yet to be understood, and many practical questions remain. Above all, it will be essential for the government to maintain substantive dialogue with the academic community. But I am cautiously optimistic that this framework can minimize unnecessary or unworkable incursions against academic openness. We must adhere to the fundamental openness of our system of higher education.

A senior government official recently remarked that the system should allow "serious students to study in serious institutions," and that once admitted by the State Department, they should not be denied the basic freedoms and values that define America. I agree.

The issues surrounding research materials and information in the context of homeland security also are complicated. The complexity arises from the fact that it is not possible to place either materials or knowledge into neat boxes labeled "Useful for Terrorists," or "Not Useful for Terrorists." Terrorism to date has been low-tech, although somewhat sophisticated organizationally. Truck bombs, the commandeering of commercial aircraft, and credit card fraud are not the stuff of doctoral dissertations. To date, the primary tools of terrorists have been fertilizer, diesel fuel, and a variety of off-the-shelf chemicals – and they remain among those about which we should be most concerned.

Traditional weapons of mass destruction, such as nuclear weapons and missiles, require advanced "know-how" and techniques beyond the basic scientific knowledge attainable in university classrooms and laboratories. The materials for nuclear weapons must be maximally secured, and "know how" must be protected insofar as possible through existing formal classification and security processes.

Cyber terrorism requires sophisticated information and knowledge, but it is presumably readily available, as are the computers and internet access necessary to implement it. It is not obvious to me

that this area is ripe for reduction through restrictions on universities.

Bioterrorism for me is a more perplexing area of concern, perhaps in some measure because it is the area I know the least about. But for the most part, basic knowledge that might be used for ill purposes is readily available in the scientific literature. It is not clear to me how difficult it is to attain the "know how" to do things such as milling dangerous biological agents for their dispersion into the environment. But presumably the difficulty is not great.

Biological materials and knowledge are also special cases because the distance from the research laboratory to application is very small. But the tools of contemporary biology are clearly double-edged swords: the knowledge that tells one how to make agents more virulent may simultaneously be the key to more effective therapies. The National Academy of Science and leading life science organizations are working hard to resolve these dilemmas and provide advice and guidance to scientists and to the government.

There are common-sense steps that we should all take regarding dangerous biological, chemical, or other materials. We should minimize inventories . . . work insofar as possible with micro quantities . . . and maintain accurate and effective inventories, security, and tracking of these materials. We should educate all of our students about the security of scientific materials, integrating such training with health, safety, and environmental responsibilities. And students should not work with such materials – or indeed in virtually any laboratory setting – alone.

IN THE NATIONAL INTEREST

The quest to responsibly maintain the openness of American academia to students and research is very important. But our nation's universities are also committed to contribute to our nation's security at this time.

Last fall, MIT established an ad hoc committee on access to and disclosure of scientific information. It was chaired by Dr. Sheila Widnall, a distinguished professor of aeronautics and former Secretary of the Air Force.

Interestingly, this committee was conceived well before September 11. It was asked to consider two questions:

- First, how should we look at access to and disclosure of scientific information in the university setting?

- And, second, institutionally how can we make concerted contributions to the protection of human life and infrastructure?

Their essential finding was that openness should be our guiding principle.

They concluded that national security, the health of the nation, and the strength of our economy depend heavily on the advancement of science and technology and on the education of future generations. The well-being of our nation will ultimately be damaged if education, science, and technology suffer as a result of any practices that indiscriminately discourage or limit the open exchange of ideas.

Indeed, the Widnall Committee recommended that MIT maintain three longstanding policies in support of the openness of the educational enterprise:

- Classified research should not be conducted on campus.
- No student, graduate or undergraduate, should need a security clearance to conduct thesis research.
- And no thesis research should be undertaken in areas requiring access to classified materials.

The Committee recognized that many of our faculty will contribute to homeland defense and counter-terrorism through consulting or service on federal boards engaged in, or overseeing, classified projects. To facilitate this national service, MIT will continue to arrange for them to have access to off-campus facilities where they can handle classified documents, and, in some instances, conduct research.

Our faculty also are pursuing a number of important unclassified research and development projects directly relevant to protecting life and infrastructure against terrorist attacks.

I raise these matters today to emphasize that we believe that we can contribute mightily to the needs of our nation at this time and at the same time maintain the fundamental openness of our campus and its learning environment.

A REVOLUTION IN EDUCATION

Thus far, I have discussed what I believe to be appropriate university responses to those forces pushing us inward and threatening to isolate us. The issues are complicated. But I am optimistic that with continued substantive dialogue between the federal government and academia, we can maintain the essential openness of our campuses to students from around the world, while also maintaining appropriate levels of security and assisting our national defense against terrorism through both research and education.

But what of the outward forces and opportunities brought about by communication technologies like the World Wide Web? These offer powerful channels of empowerment and democratization to improve the quality of life here at home, and throughout the world.

It is up to us to define what the "Internet revolution" will mean, and should mean, for learning on this planet.

We all know that the "Digital Divide" continues to exacerbate the gap between rich and poor, and no one has yet figured out quite how to reverse that trend.

But the information revolution also offers opportunities to help level the educational playing field between the world's haves and have-nots.

At MIT, the faculty are committed to a major role in this process.

Over the next few years, the MIT faculty will make all of our course materials available to everyone . . . anywhere in the

world . . . free of charge . . . through the World Wide Web. We call this MIT Open Course Ware, or MIT OCW.

The OCW material will include course outlines, detailed lecture notes, reading lists, problems, simulations, essay topics, demonstrations, and myriad other things. Materials for the first 100 courses will be available on the web this fall.

Our primary audience is not the individual student. Rather, we see our primary audience as teachers – our global colleagues in education.

Teachers from across the nation and around the world will be able to take bits and pieces of these resources, add their own flavor to them, and shape them for use in the context of their own research, culture, and goals.

At the same time, OCW will make it far easier for faculty within MIT to provide well-formatted materials to their students, and to share their ideas and teaching materials with each other . . . and so to improve the quality of education at the Institute.

I've been extremely encouraged by the reaction we've received. Since we announced OCW, we've received literally thousands of messages from support from students, parents, teachers, and professors – from around the world.

Our final great goal is that other institutions will be willing and able to throw open their curricular doors as well – that OpenCourseWare will be a beautifully contagious idea.

Paul Brest, president of the Hewlett Foundation, one of the two major supporters of OpenCourseWare in this pilot stage, put it this way. He said, "Our hope is that this project will inspire similar efforts at other institutions – and will reinforce the concept that ideas are best viewed as the common property of all of us."

Now, our litigious society may not make it easy to embrace such an open educational vision. As you well know, the entertainment industry and its interests have greatly influenced the development of legislation that governs electronic media. Intellectual property issues are now part of academic life in ways we would never have imagined even a decade ago.

Nonetheless, we will basically treat our OpenCourseWare materials under the "fair use" standard, so that it is readily available for non-commercial use.

And MIT is working hard to make sure that the materials we post as part of the OpenCourseWare initiative do not infringe on the legal rights of third parties. We are confident that we will resolve such issues. Because the benefits of a revolutionary level of educational openness are too important to give up.

CONCLUSION

The culture of science has long been international. And it was an important element of the base of common understanding, and of the forces for freedom, that ended the Cold War.

Of course today, we do not face a superpower nation across a nuclear abyss. Rather we face an indistinct but deadly force of groups and individuals we call terrorism.

We see the mind of the dedicated and suicidal terrorist at best through a glass darkly. Yet, I must believe that it is a mind bred in poverty, absolutism, and ignorance. Open education and scholarly exchange stand in opposition to this. They are forces for economic advancement, tolerance, and learning.

Thus, I remain optimistic about the transforming power of education for our nation and for the world as a whole. And I remain convinced that our country can reconcile its legitimate needs for defense and homeland security with a fundamentally open educational system – an educational system that will continue to enrich our nation and world through the flow of students, scholars, and ideas across national boundaries.

Thank you.