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Office of the President

Bangor Foreign Policy Forum

Nov. 7, 2005

Robert A. Kennedy, President, University of Maine

Thank you for the invitation to be with you this morning. It is nice to see so many friends here, and it is great to see this forum taking hold. I'm pleased that UMaine, especially through Bahman's hard work, is centrally involved in this series. It's another one of those things that makes it great to have a university in the community, because it helps to make interesting and intellectually stimulating activities like this possible.

I've been asked today to share some thoughts about higher education and the global workforce. This is a critical issue for all of us who care deeply about education and what it means to the future – the future in a world that is changing very quickly and very dramatically.

The university is, in many ways, an ideal, which has broad and significant meaning for our society. Based in 19th century Europe, the university has of course modernized, but it is based on a sort of utopian vision.

That ideal is exemplified in this quote from Noel Annan, the 20th century British author and academic, who once said that universities "exist to cultivate the intellect. Everything else is secondary. The most precious gift that universities can offer is to live and work among books and laboratories and the most important lesson they can teach is how to use the intellect," Annan said.

That still applies today. We do exist to develop people as problem-solvers, as communicators and as contributors to society.

But we do so in a 21st century world that is changing – a world with new expectations for higher education and for the students who emerge as graduates.

The international landscape is, of course, changing. Higher education is subject to forces of change from the economy, demographic shifts, federal and state policies, and public opinion.

Information technology increases accessibility and it creates new ways of teaching, learning and researching. It also means an explosion of new opportunities.

If the universities of the 1800s were shaped by nationalism, universities of today are being shaped by globalism.

The "death of distance," as Bahman calls it, is affecting education in the same way it is affecting business. The World Bank estimates worldwide spending on higher education at \$300 billion per year. There are more than 80 million students around the world, and 3.5 million people employed in this enterprise.

In his new book, "The World is Flat," Tom Friedman contends that the world is in the grips of what he calls a "soft revolution," where knowledge is replacing physical resources as the main driver of economic growth. Technological capability is now seen as a measure of a nation's strength.

Human capital has become the most scarce resource in the global economy. Our ability in the U.S. to attract the best scientists, engineers and entrepreneurs, is one of the country's greatest advantages, but it is one we are in danger of losing.

The best asset the U.S. has with regard to technological and economic strength is its system of higher education.

We have some of the top universities in the world. Students from every continent are coming to the U.S., in very large numbers, to study at our universities, and for good reason.

The Institute for Higher Education at Shanghai University has an objective ranking system, based on a variety of measures, for ranking universities around the world.

Seventeen of the top 20 are in the U.S., 35 of the top 50.

American universities employ 70 percent of the world's Nobel Prize winners.

The Economist magazine, looking at data from 2000, figures that Boston's eight research universities provided a \$7.4 billion boost to the region's economy, generated 264 new patents, and granted 280 licenses to private enterprises.

I'm proud of the impact we have at UMaine, along similar lines. We generate over \$600 million in economic activity each year. We have an economic output estimated a \$6.60 for each dollar of state investment. Our researchers in many areas leverage federal dollars at an even higher ratio. We are one of this region's two largest employers, and we have a presence in every county in Maine.

UMaine carries a specific designation as a statewide flagship university and our mission is unique. We have more students than any other Maine college or university and the largest faculty – a collection of scholars as good as any I have ever been around, and I've been fortunate to work at places like Ohio State, Texas A&M, and the University of Maryland.

UMaine has internationally recognized scholars in many areas. Bahman, by the way, certainly is one of those professors. Our institutes and centers, such as the Climate Change Institute, Laboratory for Surface Science and Technology, Advanced Engineered Wood Composites Center, William S. Cohen Center for International Policy and Commerce, and Sen. George Mitchell Center for Environmental and Watershed Research are world-class.

And we have plans to add to this roster. For example, we have a new Graduate School of Biomedical Sciences, which will have a significant statewide impact, on our economy, on the education of students and, potentially, on human health. It is a very exciting initiative.

Despite the obvious strengths of the U.S. system of higher education, we would be foolish to ignore slippage with regard to engineering and science Ph.D.s and other important indicators, vis-à-vis countries like China and India.

Technology and mobility are changing higher education, and those factors are giving students more control over where they get their education. This is part of a worldwide educational revolution with several impacts:

- Millions of young people study abroad;
- Colleges that teach managerial and technical skills are cropping up regularly, in many places;
- Academics are reconnecting with the wider knowledge economy;
- Most important – this revolution is freeing resources for intellectual activities; it is filling libraries with books, stocking labs with equipment.

Perhaps the best example is China, which is engaged in the biggest university expansion in human history.

Twenty-five years ago, only 2-3 percent of eligible students went to a university. Two years ago, that number was up to 17 percent. In 1999 alone, that number jumped by almost half. Expansion at the doctoral level is even more dramatic. Almost 12 times as many doctorates were awarded from 1993-2002, as compared to 1982-1989. And the number of new doctoral students went from 14,500 to 48,700 in the past five years. As a very high-ranking Chinese official acknowledged recently, "First-class universities increasingly reflect a nation's overall power."

Beijing University is one of China's leaders in this area. MIT mathematician Tian Gang helped set up an international research center for mathematics there. That's one of several high-level research centers under development at that university.

Beijing University officials estimated that 40 percent of its faculty was trained outside China, mostly in the U.S. Yale President Richard Levin was in Shanghai in September, where he had high praise for China's students. "China has 20 percent of the world's population, and it is safe to say it has more than 20 percent of the world's best students. They have raw talent," he said.

President Levin also pointed out that low labor costs have made it easier to upgrade universities in China. He pointed out that new laboratories he visited at a Chinese university were built for 10 percent of the per-square-foot cost of the same kind of construction at Yale.

At the same time, other countries are using post-9/11 U.S. restrictions to their advantage. For example, Australia and New Zealand are, in effect, working to turn education into an export industry.

Foreign students are potentially valuable in three ways: they pay the university they attend, they spend money on food and other products, and they just might end up staying permanently.

For many countries, higher education represents part of a strategy for shifting market economies away from their traditional underpinnings.

Market-based economies are taking hold in Asia, Latin America and Europe. Universities in Canada, Australia, New Zealand and Europe are competing for students, and they have their eyes on graduate students. From 2002-2004, the number of foreign students increased by 21 percent in Britain, 23% in Germany and 28% in France.

More and more European universities are offering American-style programs, in English. Universities in the developing world are expanding rapidly, as well.

Other general trends, which are significant, include:

- Improved global communications (the Internet in particular);
- The general internationalization of education.

These are trends that are only going to continue.

U.S. strength in providing the best education should not be underestimated. The loss of the quasi-monopoly is not the same as a long-term decline. The market for students will grow as Asia produces its own middle class, and American universities are positioned to compete in the global student talent market.

There seem to be three primary reasons for optimism about U.S. higher education and its capacity to attract the best students and faculty.

1) Competition

American universities compete for everything – students, professors, even hockey players. Professors compete for research grants; students compete for scholarships. Successful institutions know that they must always work hard to move forward. At UMaine, we compete – quite successfully, I might add – to get the best faculty and students into our community. This will continue to be a focus, and it's a big part of the reason we're planning a major fundraising campaign. A primary focus of that campaign will be funding for scholarships, professorships and faculty chairs. Those are the very things that will help us compete for the best and brightest.

2) Another strength of American higher education is our capacity to educate students to be practical and useful community contributors, and to make real connections.

America pioneered the art of forging links between academia and industry. We work very hard on such connections at UMaine, through units like our Advanced Manufacturing Center and Advanced Engineered Wood Composites Center. American universities earn over a billion dollars a year in royalties and license fees. UMaine is an example of the more than 170 universities that have business incubators, and we've started a new concentration in Innovation Engineering. This shows, I think, that universities like UMaine have a real interest in extending their expertise and their resources to benefit not only business, but society as a whole. And if we do our job right in the education process, we will turn out individuals who can play major roles in helping to affect advances of all kinds.

3) Complementing those strengths is our system's diversity, which reflects our democratic ideals.

The wide range of institutions we have has created a remarkable combination of access and excellence. Only a small percentage of higher-education institutions are research universities. Many, many more are community colleges, which do essentially no research and offer two-year degrees. But they provide the foundation outstanding students need to move to a prestigious university. It is a system that encourages participation and engenders success.

The National Board of Higher Education and Workforce has a committee that looks at the changing needs for research personnel. Among the areas in their purview are:

- Examination of the need for research scientists in emerging fields like genomics, bioengineering and biotechnology;
- Assessment of how well MD/Ph.D. programs encourage research careers.

Both of those relate to current activities and initiatives at UMaine. Our Graduate School of Biomedical Sciences aims to develop Ph.D. scientists in those important disciplines, while making real advances in bioscience research.

And we've recently joined with the University of New England to create a Ph.D./O.D. program, which will combine our faculty and other resources to work on both research and clinical concerns.

This suggests to me that we in Maine are on the right track, and that our statewide work to develop collaborations and cooperative arrangements, which allow us to share resources and expertise, will serve us well in the changing worldwide environment.

The subject we're discussing today is getting a lot of attention around the U.S. and around the world, especially in higher education circles.

We're hoping to make sure we're doing the right things, collectively and individually as institutions, to help the U.S. keep up. Among the things we need to do, in my view, are:

First, to continue to pursue our core mission of developing and educating our students, so that they learn to communicate, to analyze problems effectively, and to contribute in various important ways.

In contemporary times, they must also be prepared with the necessary background to thrive in a shrinking world. They need an understanding of cultures, of linkages and of history.

Beyond that, we need to be aware of the needs that exist, and do what we can to help solve the associated problems. This is not solely to create a trained workforce for the sake of our graduates who are entering the work world. More importantly, we need to recognize that those needs exist because of underlying causes, and we must develop people who will solve the most vexing problems.

We are thinking this way at the University of Maine, and so are our counterparts at universities all around the world.

As University System of Maryland chancellor William Kirwan, speaking last year, pointed out that these challenges are not new. After World War II, U.S. higher education became much more accessible. That was a reaction to circumstances not dissimilar to those we face today. Chancellor Kirwan is right, and his message should give us a signal that we in the U.S. are capable of getting on the right track and staying there.

Public higher education, as it is with regard to so many problems, is a big part of the solution in this case. Our built-in diversity, which we treasure at UMaine, goes a long way toward helping our students understand and appreciate differences. Universities are a window to the world in many ways.

We're proud of our growing international programs at UMaine, which provide opportunities for travel and study abroad. Students who understand and take advantage of what a university is, stand to do well in a changing world.

The challenge is to capitalize on our strengths, remain true to what we are as universities, and be agile enough to adjust, for the good of students and the good of society.

Late last summer, Microsoft CEO Bill Gates spoke to the National Conference of State Legislatures. He stressed innovation as the essential characteristic people and institutions will need to thrive in the modern world. And he pointed out that universities are the key to cultivating that ability to innovate. For one of the great innovators of our time to be so clear about that point says a great deal, and I certainly believe that he is right.

Higher education has perhaps the biggest role to play in keeping the U.S. competitive.

The challenge we face today is how to create and nurture a system of higher education that balances the twin demands of excellence and mass access. It must be a system that makes room for global involvement by universities, while maintaining quality control over the education we provide.

We need to exploit the global opportunities provided by new technology, while also recognizing that education requires a human touch.

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