



Keynote Address by UC President Robert C. Dynes
 Milken Institute "State of the State 2006" Conference
 October 30, 2006, Beverly Hilton

The University of California's Role in Maintaining the State's Long-Term Competitiveness

I'd like to thank Mike [Milken] as an alumnus of Cal, which is what UC Berkeley is referred to in Northern California, for carrying on the Cal tradition of innovation and philanthropy throughout California. It's a tradition that begins at Cal and carries on here into Southern California.

As Mike said, I grew up in the flatlands of Southern Ontario, and I seriously thought about playing hockey as a profession. I wasn't quite good enough, but I learned a few things about being competitive ... And I'll talk about competitiveness, the competitiveness of California and the University of California, which are tied together at the hip, in my view.

I'm too old to have played hockey with Wayne Gretzky, unfortunately. Wayne, as you've all heard, has this really cute expression, which is: "Don't skate to where the puck is, skate to where the puck will be." I think that's what lured me away from hockey to science. In the '60s, I recognized that science was really where the world was going to be in the next half century, and I believe I was right.

As Mike said, I spent 22 years in Bell Laboratories, and it was a marvelous place, it was mecca for the kinds of science I did. But I saw something really disturbing happen during the '80s and into the '90s. Basic science and research was moving away from industry in the United States because of international competitiveness. So I moved to where basic research had to be done, and had to be transferred to industry, and that is the University of California. I moved there [the San Diego campus] in 1990 and spent a wonderful time there before I made this horrible mistake of taking over as president of the University of California.

Let me explain why I did that. I'm determined that this institution, the UC, and the state, will go to where the puck is going, where the puck will be 20 years from now. That's my vision for the University of California, and I'm going to talk a little bit about that. I believe that the future of the University of California and the future of California are connected. So let me talk about the mission of the University, the strengths of the University and the strengths of California, and how I intend to exploit those strengths and carry out our mission to serve the state of California in a way that I don't think you've heard before

because I've not ever said this except to a few people in the past few months. I've been crafting this vision of where we're going over the past six months or so.

Let me start out with an unequivocal assertion, and then I'll justify it. The unequivocal assertion is that the University of California is the finest university in the world. Now let me justify it. I have friends who come back to me rapidly, perhaps even one of two of our Stanford friends and our Harvard friends, and say, "Wait a minute. What about our school?" While it's true that we compete for research funds, for faculty, for students, with Harvard, MIT, Princeton, Chicago, Caltech, Stanford, while we compete with those institutions, there are two major differences between UC and them.

The first thing is fundamental, which is that we're a public institution. So our mission is different. As a public institution, we have a responsibility to deliver quality, both in human capital and in intellectual property, to society, in our case, the state of California. That's not the mission of private universities. The second, and the reason that I really assert that we are the finest university, is that we have a huge impact on society. We're really big compared with these other schools. We're 10 times the size of these other schools. So we can brag that we have won more than 50 Nobel Prizes and that we have a huge economic impact on the state of California and on the world.

As I think about the future, I think about this issue, the fact that we are 10 campuses, five schools of medicine, three national laboratories. That's our competitive advantage. We're not nearly as wealthy as those privates. And so I think, "Why do we still compete? Why do we, as a public institution, compete as well as anybody with these privates?" The reason is that we're big. And we have to use our competitive advantage of these 10 campuses. So as we go forward, you're going to hear things like "the power of 10" and "the promise of 10," because we will be one university of 10 campuses as opposed to 10 universities. And I'm going to describe some efforts that I'm putting together to use the strengths of all of our campuses as we go forward.

Our 10 campuses are driven by a common mission, really three interlocking missions: research, or as I see it, creating new knowledge; education, or creating that next generation of those that create the new knowledge and the leaders of California; and public service, or putting our ideas and our people to work for the benefit of the citizens of California. I believe that we at the University of California must harness this power and promise of 10 to build for the future and to keep California competitive as we look 20 years out.

To do that, I've laid out basically three planks that we're going to focus on at UC. The first is, we will fuel innovation and expand its impact on people's lives by focusing on what I call R, D, and D. You've heard of research and development, R and D. The second D is as important, and I'll talk a little bit about it. The second D is delivery. If we do all the R and D in the world, and it isn't delivered, it's not effective. That's the first plank.

The second is that we must forge strategic international alliances to the best and the brightest minds around the globe so that we can still be attractive to bring the smartest people in the world to California. Because it's my belief that if they come, they will not go back home. Third, we must enhance the quality of California's future workforce by taking seriously and in a full-bodied way K-12 education, and not just complaining about it, but doing something about it. And I'll talk about what we're doing.

So let me briefly talk about those three platforms. We entered, in my view, the era of R, D, and D actually on 9/11, September 11, 2001. Many of you watched on television as the World Trade Center buildings collapsed. I watched as the first responders tried to communicate with each other. And the firemen couldn't talk to the police, and the police couldn't talk to the rescue squads. And I'm sitting there in my home in La Jolla thinking,

“No, no! We have the technology, they can talk with each other, what the hell’s gone wrong?”

The answer is, we had not delivered the technology to the first responders. It was at that moment that I realized the University can no longer leave alone the delivery part. We must work with industry, we must work with businesses to help the delivery to the first responders. The University can do things that industry can’t do, and industry can do things that the University can’t do, and we can’t just leave it alone.

An example of what I’m talking about are four Institutes that have been created inside the University of California – actually, they were created during the Gray Davis administration – the California Institutes for Science and Innovation. What they have done is link several campuses together with industry to address things like information technology, health care, nanosciences, and the interface with society.

Let me give you one example of what I mean, let me be practical. In the Bay Area, there’s an institute called the California Institute for Quantitative Biomedical Research. We call it QB3 for short. It harnesses the intellectual power of UC Berkeley, UC San Francisco, UC Santa Cruz, and the Berkeley National Laboratory. The idea is to bring the life sciences together with the physical sciences together with computer science. We have some really outstanding young people at UC Santa Cruz who work on informatics. The Berkeley Lab has every tool known to man or woman for physical measurements. UCSF is one of the finest life sciences schools in the world. And UC Berkeley, well, it’s got everything. I’m a professor at Berkeley, so I can say that.

If you think about it for a minute, if you think about bringing those four institutions together within a few miles, there isn’t another place in the world that has that kind of intellectual resource. And then if you bring together the biotech industry in collaboration with that institute, there’s nothing like it. Example: On the Mission Bay campus of UC San Francisco, one of the buildings belongs to QB3, not the faculty of UC San Francisco. On the third floor, they do fundamental biosciences, fundamental research. On the second floor, they do drug development, taking the results from the third floor and other results. On the first floor, they’re doing clinical trials. Patients are coming into the building and being subjected to clinical trials, hopefully, to save people’s lives. At all four of these Institutes, R, D, and D is being practiced – not R and D – R, D, and D. And it’s carried out by faculty, students, postdocs, undergraduates, and industry visitors. We have hundreds of industrial partners, mostly in California but not exclusively in California. And it’s a very different way to think about education at the undergraduate level and the graduate level. I don’t know how else to teach creativity and innovation than to take undergraduates, put them in the environment where innovation occurs, and hope it rubs off.

The second platform is global alliances. On the international front, I’ve recognized that we’re a little late coming to the table, but we carry a huge reputation. This compelled me to begin working on alliances as near as Canada and Mexico, and [far as] China, India, and Africa. You do not build global competitiveness, in my view, by building walls. You build global competitiveness by attracting the best people in the world. All these other societies are grappling with the same issues: public health, infectious diseases, energy, transportation, food, the environment. These are huge problems. These are not physics and chemistry and biology. These are problems where you have to bring social scientists together with philosophers, scientists, and engineers.

This concept has taken me to China twice in the past year. We’ve built an agreement called “10 + 10”: the 10 campuses of the University of California and the 10 finest research universities in China. I know it’s working, because the Minister of Education told me last time that they took the California Higher Education Master Plan and translated it into

Chinese. And they've now designated the research universities, those that will become the equivalent of CSU, and those that will become the community colleges.

So we're partnering with the 10 best research universities in China. The Chinese, of course, want to build a vibrant economy similar to California. I said to the Minister of Education, "You understand, I'm not doing this for China, I'm doing this for California. And many of the people we bring here to study as postdocs and graduate students are going to stay in California." He smiled at me and said, "Then we'll send more."

Let me give you a taste of what the potential is. China has one and a half billion people. Tsinghua University in Beijing accepts one out of every thousand applicants. It is my sense that we should be trying to pick some of those off. We have traditionally in California done that, and it's created a vibrant economy. This is controversial among some people. But I'll defend it.

The third issue is science and math, K-12. I've traveled a lot around the state of California, and I've been shocked at whole schools and whole school districts that don't have a single science- or math-credentialed teacher – it's been shocking – both in the cities and in the rural areas, not a single one. In May 2005, I realized we had to do something about this.

So together with the Governor and CSU President Charlie Reed, we at UC launched an initiative to increase the number of qualified math and science teachers. I committed – without a lot of [resources], I just did it on a whim, I knew we had to do it – that we, the University of California, would be producing a thousand science and math teachers a year. It's called "A Thousand Teachers, A Million Minds," the argument being that those thousand teachers over 10 years would infect a million minds with a love of science and mathematics. Because if you talk to kids now in 9th grade, they're failing 9th-grade algebra. They have no passion for the technical world we live in. And we're losing, folks, we're losing.

For our part, the University of California has created a program called "Cal Teach." It addresses three issues: recruitment, education, and retention. I won't go into the details of how we do that, but we have, I think, a thoughtful plan as to how to recruit these young people, teach them inside UC, and retain them after they're out teaching in our K-12 schools throughout California.

This initiative has received so much enthusiasm in the rest of the country that you might remember that President Bush, in his State of the Union address last year, announced a program called "Ten Thousand Teachers, Ten Million Minds." He copied ours. Well, we still have to do it, let's not be too smug. We're working hard at building that. And I've been pretty proud of this program. But then I received a letter from a Californian, and I want to read this letter to you:

Dear President Dynes:

I just received a letter for my daughter, Carla, from you and the Governor of California congratulating her for acceptance into the most outstanding research university in the world, the University of California.

This letter sounds very promising for brilliant students like Carla. It offers to forgive student loans in exchange for becoming K-12 science and mathematics teachers in California through the new program called California Teach.

I am a teacher, and I strongly discourage Carla from becoming a teacher for various reasons.

- First of all, teachers are now told exactly what and how to teach everything, so there is no room for thought and creativity like in prior days.
- Secondly, teachers must rush students through the material or else they fall behind the pacing guide they are given and must follow.
- Thirdly, teachers are underpaid for their hard work and level of education.
- Fourthly, teachers are highly educated, yet they are not respected and allowed to make crucial decisions about teaching.
- Last of all, teachers are made accountable for the performance of their students, but their parents are not held accountable.

During this decade, I have seen the teaching profession become an assembly line production, but educating students is quite different from manufacturing automobiles. It resembles the political system my parents left behind in their homeland, Cuba. Teachers have to deal with criticism and pressure from politicians, parents, and administrators. However, they get very little support.

Carla is brilliant, motivated, and bilingual, but I will make sure she does not become a teacher. She will be a respected leader and make a tremendous impact on California. Her two brothers, Daniel and David, are also very smart. They also will be future leaders, but not teachers.

Sincerely yours,
Elsa M. Morales
UCLA Class of 1986

We must fix these problems. This may be the toughest job I've taken on. Let me end with an invitation to you. Let me end on a high note. We're going to take this on, by the way. I'm going to need your help, but we're going to take this on.

Let me end on a high note with an invitation. There are days when I feel awful. There are days when you feel depressed about the future. On those days, when the news is bleak, go walk on a UC campus. Sit down with some students. Listen to them. Talk to them. When you see these leaders in training, when you experience their energy and enthusiasm, I guarantee you will feel optimism. And when that happens, I hope you will agree that higher education is the best investment California can make. And I hope you'll share that with your friends. Thank you.