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California's competitiveness starts with research universities

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By Robert C. Dynes

For the last few weeks, students across California have been receiving admission letters from the University of California. It's a tense time of year, but also an exciting time -- a time when many of us are focused on the personal value of obtaining a top-quality college education.

Teaching and learning are, indeed, the heart of what we do at UC. Often overlooked, however, is the full impact of a research university such as UC, which extends far beyond the classroom and campus borders. That impact can be measured in jobs, in life-saving medical techniques, in the safety of our food and in new products that improve our lives. The reality is that the UC system is a major generator of economic growth for California -- educating a highly skilled workforce, developing new technologies, creating jobs and generating prosperity. And when it comes to keeping our state's residents healthy and productive, UC is making a vital contribution through its clinical care and research.

California's competitiveness, I believe, is closely tied to its research universities. This is an important concept at a time in which the state is simultaneously cutting budgets and trying to stimulate economic growth. Consider just a few facts:

- UC faculty and graduate students produce an average of three new inventions every single day. These are the inventions that lead to new products, new companies, new jobs and entire new industries for California. For instance, UC faculty and alumni have founded 1 in 4 biotechnology firms in California, and 85 percent of California biotech companies employ scientists and engineers with advanced degrees from UC, according to a study by the Industry-University Cooperative Research Program.
- UC's activities contribute \$4 billion to state and local tax revenues every year, and the university's total economic impact on the state has been estimated at more than \$14 billion by an independent analysis conducted by ICF Consulting, an international planning and economic consulting firm. That analysis also estimated that UC research discoveries will generate more than 100,000 new jobs for California in the next decade.
- UC operates California's second-largest physicians' practice, educates 60 percent of the state's medical students, provides health care for many of the state's working poor and handles 239,000 emergency-room visits every year, according to the ICF report.

- UC also has a long history of producing major breakthroughs that improve our health and keep our workforce productive. UCSF professors won the 1989 Nobel Prize for their discovery of normal genes that, when mutated, cause cells to become cancerous. Another UCSF professor won the 1997 Nobel Prize for discovering the infectious agent that causes "mad cow" disease and similar neurodegenerative diseases. And just last year, the Centers for Disease Control and Prevention turned to a young UCSF scientist to help classify the deadly SARS virus.
- When it comes to teaching students, UC provides much more than book learning. A UC education really is about teaching the next generation how to be innovative, creative and competitive -- how to take risks, learn from mistakes and build on them. Those characteristics are the fundamental underpinning of the California economy and the key to its future.

Last month, however, a report from the Milken Institute found that, while our state remains a leading center of high-tech innovation, California is starting to lose ground to others in the education and training of its residents for technical careers. "California must continue to increase funding of science and technology in its university systems or risk losing one of its most important historical comparative advantages," the report said. "Other states have made this a top budgetary priority."

As I have traveled around the state, business leaders have echoed this sentiment. Over and over, they have told me that they need the University of California to continue generating research innovations and producing a highly educated workforce -- and that they need more from us, not less.

But the fiscal trends are troubling. In 1970, about 7 cents of every state dollar went to fund UC. Today, it is 4 cents and dropping. Over the last four years, California's growing college-age population has increased UC's enrollment by 16 percent, but state funding for the university has fallen by 16 percent. Fee increases and program cuts have left students and their families paying more and getting less, while some UC-eligible applicants are now being asked to spend their first two years at community colleges. In addition, the state has reduced its investment in the research programs that produce such significant economic returns.

This is the time for us all to step back, envision the future we want for California and invest accordingly. To stimulate economic growth and enhance our quality of life, we need to bolster research programs, keep attracting to California the best faculty and graduate students from around the country and the world, preserve college access for undergraduates and sustain programs that help improve the academic achievement of students in our public schools.

California is a place unlike any other on the planet. Its culture of innovation, diversity, entrepreneurship and the-sky's-the-limit creativity is what drew me here, and countless other Californians have similar stories to tell. Much of "the California way" traces back to our public higher education system -- and to the citizens who saw the link between education and the larger well-being of society.

Working with our partners in the California State University and the California Community Colleges, we at the University of California want to extend the positive impact of higher education on the economy and well-being of our state to create an even better California. But it requires, in the end, that higher education be viewed by decision-makers not just as another expenditure, but truly as an investment -- in our future, our children's and our grandchildren's.

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