

**Remarks of Chancellor Milliken  
Cockrell School of Engineering Advisory Board Dinner  
April 11, 2019**

**Introduction**

I've been Texan for only seven months. It may seem obvious to all of you why someone would move here; maybe your only question is whether I'm so slow that this is getting here as quickly as I could!

I left a pretty comfortable and rewarding life in New York City, a place I will confess privately I actually like, to move to Texas. And I'm so glad I did.

When I was talking to the search committee, the Board of Regents, and the Governor, something I strongly suspected became crystal clear.

It wasn't the much better weather.

It wasn't tacos for breakfast.

It wasn't even the generous and engaged members of Longhorn Nation.

Although all those things are wonderful.

**Texas Confidence/ A&M**

The thing that most attracted me to Texas is the ambition, confidence and optimism that is so clearly part of this state's DNA.

When you look at the landscape around the country, you see a lot of folks with their heads down. Especially in public higher education.

That's not the case in the Lone Star State.

You know the saying, as Texas goes, so goes the nation.

I think it would be a very good thing if the other 49 states got infected by the confidence and optimism that seem to come naturally here. This feeling I had about Texas has only strengthened since my arrival in September.

Now, also since I've arrived, I've been told by some that Texas A&M is gaining on us, and that we need to step up our game.

It is true that we do need to step up our game, but not because of A&M. They are not our competition. Our competition is global, not in College Station.

You'd be forgiven for thinking we in a race with Texas A&M if you just arrived at the Austin airport, where they've wallpapered it with ads. I have resisted any temptation to retaliate with an expensive ad campaign at the Bryan-College Station airport!

Soon after I arrived, someone gave me a copy of the book Higher Education in Texas. Riveting.

But I did learn something really interesting. The Constitution of 1876 established the University of Texas. And it established a school of agriculture and engineering, to be located in College Station, reporting to the UT Board of Regents.

That language has never been changed, although it seems it's been ignored by the legislature.

I haven't forgotten it, and the first time I shared a platform with Chancellor Sharp, I pointed it out. And I told him I was going to schedule his first performance review soon....and he had lots to answer for.

## **Innovation**

Along with confidence, equally embedded in the DNA – of both Texas and the UT System – is a spirit of innovation and an entrepreneurial bent that have helped make our state's economy the envy of the world.

At \$2.9 billion annually, the UT System is 2nd only to the University of California System in total research dollars – and I like our chances going forward.

Last year our institutions received the 3rd highest number of patents of any system in the country.

And, the System recently ranked 6<sup>th</sup> in the recent Reuters' ranking of the most innovative universities in the world.

But the most important “technology transfer” of any university is the achievements of its graduates who leave with a first-rate education.

In the most recent academic year, our eight academic and six health institutions produced nearly 62,000 graduates – with nearly half of the degrees earned in STEM fields, which compares to the national rate of about a third.

On the Forty Acres, we have one of the finest public research universities in the country – and, of course, and one of the best engineering schools anywhere.

### **Texas Needs Engineers**

The work being done at the Cockrell School, both in teaching and research, could not be more important.

As you know, Texas and our nation are crying out for engineers.

I recently returned from the Permian Basin, which – on its current growth trajectory – will rank as the fourth largest oil and gas producing country in the world by 2025, and it is making the U.S. number one in the world.

An area – and economy – with such demand that you can now, apparently, earn six figures cutting hair.

I can only imagine all the options awaiting the talented young men and women who, in a matter of weeks will launch careers, armed with a degree from the Cockrell School.

Their choices will be vast, because they’re well prepared and we need them!

If we want the Texas economy to remain the envy of the nation, we need more engineers.

If we want our communities to be safe and secure, we need more engineers.

If we want our fellow Texans to be healthier, we need more engineers.

### **Paradox**

What greater proof that the health and prosperity of our state – and really, any state – are inextricably linked to public higher education? This should be clear to everyone, right?

But higher education in America is living through a time of great paradox.

On the one hand, higher education has never been more important.

On the other, it has never been more roundly criticized.

I've long believed that while talent is universal – distributed evenly regardless of race, gender, zip code, ethnicity or anything else – opportunity is not. Sadly, it remains stubbornly most highly correlated with wealth at birth. That sense of inequality or unfairness is undercutting trust.

It's higher education – and public higher education, which produces 70% of the nation's graduates, in particular – which levels the playing field.

It is the most powerful engine of social and economic mobility the world has ever known.

For individuals, it's likely the difference between being well-employed, under-employed, or unemployed.

In fact, we are rapidly approaching the day when every good job created will require a college degree – not to vault ahead, but to get a foot in the door.

College graduates make over a million dollars more than high school graduates over the course of their career, and that gap will only increase.

In addition to income, we know that higher levels of educational attainment create stronger families, better health, longer lifespans, more civic engagement.

In other words good things go up with education, bad things go down.

None of this is in dispute. None of it is controversial.

And yet, in thirty-plus years I can't recall a time when higher education has received as much criticism, or under as much threat as it is today.

You all know why.

Across the country, tuition has, on average, risen too rapidly.

Not coincidentally, student debt levels shot up, recently passing \$1.5 trillion.

Colleges aren't graduating their students quickly enough.

And many graduates are unable to get jobs in their field of study.

### **Not a Message Problem**

So what's the solution? How do we escape this maddening paradox?

I have been to a lot of conferences where colleagues suggest that we in higher education have a communication problem.

If we could just tell our story better, the thinking goes, the criticism and attacks will stop.

There may be some amount of truth to that, but I believe the real answer for addressing the criticism would be to do our jobs better.

Rather than bemoan our fate or just focus on telling a better story, we need to look at where we're falling short, and how we must change if we want to fulfill our role as what Andy Grove called his alma mater--the great American dream machine.

We need to up our game.

### **Texas is Growing**

And, especially in Texas, we need to do it fast.

Because every expert thinks we're going to grow dramatically – perhaps even double – in the next 30 years.

Already, the state demographer says we're growing by about 1,000 people a day, split evenly between births outnumbering deaths and new Texans moving here. And it's not linear growth.

Now personally, that's comforting; It means, even though I arrived in mid-September, I've not been a Texan longer than more than 200,000 of my neighbors.

Growth can be a wonderful thing. Ask the upper Midwest and Northeast; it's much better than shrinking.

But with this enormous growth on the horizon, we – and by we I mean everybody, but the UT System needs to lead the way – have an enormous amount of work to do, getting ready to serve a much bigger Texas.

Obviously, we can't serve a population twice as big with the same capacity we have today.

### **Educational Attainment Challenge**

But it's not just about getting bigger. It's about doing better.

Today, just three in ten Texans between 25 and 34 have earned a bachelor's degree or higher. That places us 35<sup>th</sup> out of the 50 states.

Hardly where we want to be.

A big part of the problem is we haven't yet overcome significant race and ethnicity gaps in educational attainment. For Texans over 25 years old, 37 percent of non-Hispanic whites have college degrees. That compares to attainment rates of 22 percent for African Americans and 12 percent for Hispanics. If you look at how the populations will grow in Texas, if we don't fix it, our total attainment rates will plummet in the future.

This phenomenon isn't unique to Texas. But with the third largest, second youngest, and one of the most diverse populations, it is playing out here on a scale on a scale unlike any other.

So we have the most at stake and the most to gain in removing the obstacles that thwart so many aspiring scholars today.

And with the ambition, confidence, and optimism of Texas, we can show the rest of the country how it's done.

### **PSP and AFC**

That's my sense of our challenge at the highest altitude. I want to briefly address two priorities closer to the ground level, where Texas and the UT System have unique challenges – and opportunities.

The first is doing our part to help the Permian Basin prepare for an estimated 150,000 new residents and achieving its 5 needs, identified by the Permian Strategic Partnership – education, workforce, housing, infrastructure, and health care.

UT and its engineering programs are key to their efforts.

Second, we couldn't be prouder to be the site of the new, highly sought-after Army Futures Command. I'm sure you know they stood up their new Headquarters in the UT System building in August, and we have been hell-bent on upfiling the space and working on their research opportunities.

My compliments to Dean Wood and her colleagues on their leadership in this effort. Our new work with Army Futures Command on robotics and AI is a huge priority, and General Murray and his team are very pleased.

But there is much more we can do. We won the siting competition, but that's just the first step. Army Futures Command recently announced a new partnership with Carnegie Mellon, and they're working with Stanford and other world class competitors of ours. Oh yeah, and Texas A&M.

We have an advantage and we must capitalize on it.

## **Conclusion**

So, we have a lot of work to do.

Nobody knows what the future holds, but two things are clear.

First, Texas is going to continue to grow.

And second, UT institutions will have a lot to do with what kind of state Texas becomes.

That may seem daunting to some, but I believe it's a generational opportunity for accept the challenges and create the future we want for our children and grandchildren.

When I think about the kind of world my own kids, and their kids, are going to inherit, I have lots of questions.

Can we make sure everyone has enough water?

Can we ensure adequate energy sources – the oil and gas so important to Texas -- but also economical renewables such as solar and wind?

Can we ever secure cyberspace?

Can we even secure our elections?

Can we protect our communities on the coasts from the effects of climate change? I ask as someone who owns a house 100 yards from the Atlantic in North Carolina, that took a major hit last summer.

Can we fix the New York City subways – which used to be really important to me. Or reduce Austin traffic – which is now really important to me!

None of these questions will be answered affirmatively without the best engineers.

That's the promise, the potential of the brilliant students, faculty, and researchers of the Cockrell School.

We are fortunate to have them.

And they--and Texas--are fortunate to have YOU.

I appreciate the opportunity to be with you tonight to share a few thoughts, and especially for the opportunity to thank you for the loyal support and expert guidance you bring to this world-class engineering school.

Thank you.