



**University of Virginia Keynote
Higher Education: Meeting Our Responsibilities
in an Era of Fiscal Constraints**

Presented by

**University System of Maryland
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Thank you Terry, both for that generous introduction and for the leadership you provide to UVA, one of America's great public research universities. I want to thank you as well for your leadership at the national level and, in particular, for your strong stand and actions on an issue facing all of our institutions, sexual assault on college campuses.

I am honored to join you and your colleagues from across the Virginia commonwealth.

I also want to thank Colette Sheehy—UVA's Vice-President for Management and Budget—for the invitation to participate in this forum.

This venue really impresses me. Growing up in Kentucky as I did, I always dreamed of being a great basketball player and playing at the famous and historic basketball arenas in America. Well I've finally made it to the John Paul Jones arena . . . but not exactly in the way I imagined. This gathering and its size impress me as well. Given the times we face, a cynic might say, "it's because misery loves company." But there is obviously something much deeper at work here. In this era of fiscal austerity, this group clearly understands the value that can result from all segments of higher education coming together, sharing ideas, identifying successful approaches, forging new partnerships, and promoting advocacy. These kinds of conversations are more important today than in any time I recall during my 51-year career in higher education.

I certainly don't need to tell this audience that we face daunting challenges requiring our institutions to be more innovative, flexible, and nimble, while remaining true to the education and research mission that defines us.

For my part today, I plan to offer some brief contextual comments on how we got to the circumstances we face today. But mostly, I would like to address what I see as THE challenge of our time: the *under* education of the American population and the strategies we in higher education must

embrace if we are going to leave to our descendants the kind of America we inherited from our ancestors.

By way of background, the University System of Maryland (USM), where I serve as Chancellor, consists of three Research Universities; three HBIs; four Traditional Comprehensive Institutions; two Regional Education Centers; one Specialized Research Institution; and one “Virtual” Institution, University of Maryland University College. USM enrolls more than 150,000 students, with roughly 8,000 faculty members. As Terry noted, I had the privilege of serving as President of our flagship campus—the University of Maryland, College Park (UMCP)—for 10 years before moving to The Ohio State University and returning to Maryland as the Chancellor of the system.

I mention USM in part to emphasize a point. Maryland does have a different higher education governance structure than Virginia, where each four-year institution has its own governing board. I’m not going to get into a discussion of which structure is better. I don’t think that’s an answerable question. I will say that when I was President of College Park, I thought yours was better but, now that I’m Chancellor of USM, I think ours is better, thereby proving once again that where you stand depends upon where you sit! What is worth noting is that many of the actions we took in Maryland, which I’ll discuss in just a moment, were easier to implement because of a

single statewide governing board. Still, I hope some of these ideas might be relevant for you in Virginia.

As you can tell from my description, USM is, in many ways, a microcosm of public higher education, facing all the same challenges impacting public higher education across the country. Over the past decade, we have made it a systemwide priority—just as I know you have here in Virginia—to strategically and comprehensively attack the very issues you are discussing at this gathering:

- Streamlining our administrative processes;
- Controlling costs;
- Enhancing access and affordability;
- Increasing completion rates;
- And improving quality.

Higher Education Landscape

Regrettably, we are operating in an environment today that probably none of us could have imagined even 10 or 15 years ago. Most of us grew up in an era when there was a completely different level of state and national commitment to the funding of higher education. I believe it is indisputable that America became the world leader and economic superpower following

World War II in large measure because we were the world's best-educated nation. The GI Bill and the advent of the Pell Grant created higher education opportunities unmatched in human history. Higher education became the means by which the American dream was realized for millions of people. Generously supported by federal and state funds, public colleges and universities expanded and enrollments grew at a remarkable rate during the second half of the past century, producing college-educated adults in numbers and proportions of the overall population no nation had ever previously achieved.

When our nation felt threatened by the rise of the Soviet space program, what did it do? It invested significant public funds to create the National Defense Education Act (NDEA) and greatly expand the production of PhDs in science and technology. I was a beneficiary of an NDEA fellowship and probably would not be standing here today without it.

But that was then and this is now. How things have changed in just a few short decades. For a number of years now, there has been a significant move away from federal and state support for public higher education. Even before the Great Recession hit, public support for public higher education on a per-student basis had moved to historic lows.

The troubling consequences of this dramatic shift in public support and tuition levels and on student debt are well known to us. These developments have created the sense, if not the reality, that higher education is no longer considered a public good, as it was for most of the latter half of the 20th century. It is now treated as more of a private benefit. And while it is true that recent economic and budgetary improvements have led to modest funding rebounds in select states, there is simply no indication whatsoever that any large-scale, across-the-board funding increases—federal or state—are on the horizon. If anything, the current political and fiscal realities point to a period of continued retrenchment.

And here is the irony of this situation. While public funding of higher education is declining rapidly, the demands and expectations placed upon our colleges and universities are growing dramatically. President Obama has set a national goal that by 2020, 60 percent of Americans will hold a degree, once again making America a leader in the proportion of adults who are college graduates. The Gates, Lumina, and other major foundations have set similar goals and made college completion a top funding priority.

This same emphasis on the importance of higher education attainment can also be seen at the state level. State after state is seeking to establish itself as a leader in the innovation economy, which would necessitate a massive

participation in education beyond high school, especially in the so-called STEM disciplines.

But, as you know, that's not happening. While we still lead the world in the proportion of the workforce over 55 with a college degree, we rank 12th in the proportion of our workforce between 25 and 34 with a college degree. As Bill Bowen, former president of Princeton and former CEO of the Mellon Foundation, said in a recent lecture at Rice University, ". . . the absolute level of educational attainment remains unacceptably low if the U.S. is to compete effectively in an increasingly knowledge-driven world—a world in which other countries have been improving their attainment rates much more rapidly than we have."

But there is a second and equally compelling reason—beyond the economic competitiveness imperative—why we as a nation must significantly increase college completion rates. The disparity in these rates based on income is appalling. Among those in the lowest quartile of income, less than nine percent ever achieve a bachelor's degree. For those in the upper quartile of income, the figure is eight or nine times higher and this gap is growing. Here again we do not compare favorably with other industrialized nations. In a recent *New York Times* article, Eduardo Porter noted, and I quote, "Barely 30 percent of American adults have achieved a higher level of education

than their parents did. Only Austria, Germany and the Czech Republic do worse.” He goes on to say, “It’s even bleaker at the bottom: Only one in 20 Americans aged 25 to 34 whose parents didn’t finish high school has a college degree. The average across the 20 richest countries in the [Organization for Economic Co-operation and Development] O.E.C.D. analysis is almost one in four.”

In a different era, when there were ample high-paying jobs for high school graduates, this disparity in college completion rates did not have such dire economic consequences. Today, however, the average difference in lifetime earnings between those with a high school degree only and a college degree is more than \$1 million and growing.

So, tragically, in one generation, we have fallen from grace; from being the model, well-educated country that others wanted to emulate to being a nation where economic advancement and social mobility have become stymied by the absence of more equitable higher education participation and attainment rates. Our nation’s historical claim to being the land of opportunity and the upwardly mobile society now rings hollow. Sadly, we have in fact succeeded in re-creating the economic caste system our ancestors came to America to escape. As Nicholas Kristof put it in a *New York Times* op-ed a few weeks ago, “In effect, the United States has become

19th-century Britain: We provide superb education for elites, but we falter at education for the masses.”

And so, as a nation, we find ourselves at a very troubling crossroad: a long-term, systematic disinvestment in public higher education essentially “butting heads” with the desperate need to graduate more students—especially from low economic and underrepresented populations.

What are we to do about these circumstances?

Some see the solution as straightforward. They say we just need to do a better job of persuading our states to reinvest in higher education, as in the halcyon days of yore, which will enable our institutions to continue business as usual. While I am all for pressing the federal government and our states to increase public investment in higher education and, in fact, have spent most of my adult life doing so, to put all our eggs in that basket and wait for significantly better funding to occur is, for me, like waiting for Godot.

We in higher education must seriously rethink our business and academic models. While aggressively seeking better funding, we must simultaneously actively pursue lower-cost means of delivering high-quality higher education

to more students. Failure to do so will, I am convinced, lead to a seriously diminished America both in terms of economic strength and social equity.

The actions we need to take require profound changes in our culture and traditions. And for sure, steps taken at one university or in one state may not be appropriate across institutional and state boundaries. But one thing of which I am convinced is that we cannot address the huge responsibility we have for the future well-being of our nation without a much stronger sense of institutional collaboration and partnership, a view that quite obviously is apparent among those who have gathered here today.

I'd like to mention three broad areas of activity that, in some form or another, we all need to undertake. In doing so, I will quite naturally draw upon my experiences in Maryland because that's what I know best. These areas are cost containment, new degree pathways and innovation in course delivery. I'll start with cost containment.

Cost Containment.

Actually, I'm going to tell you a story that I hope has some relevance for Virginia. I want to take you back to the year 2002, the year I returned from Ohio to become Chancellor of USM. You may have forgotten already but our economy had just entered a recession that year. Now those of us who were

dealing with university budgets back then look back on that recession with a sense of nostalgia, given what we've been through the past six years. Nonetheless, it seemed severe at the time. Maryland was especially hard hit, as I suspect Virginia was, because of the reduction in federal spending. The Free State had just elected a Republican governor who was determined to cut the budget, and cut he did. We responded, as many have when budget cuts occur, with dramatic increases in tuition, even mid-year increases. Everyone was unhappy with us . . . students, their parents, legislators, the general public. There was lots of finger pointing. We felt the state was unappreciative and unsupportive of our role in building Maryland's economy and quality of life, and the public felt we were wasteful and bloated. It was not a good situation.

So, we decided to do something about it. With the governing board's active involvement, we made a very public commitment to review all administrative and academic processes, to find savings where we could and to eliminate inefficiencies where they existed. We gave this effort the rather mundane name, Effectiveness and Efficiency, or E&E. We brought in a consultant, Accenture, to get us started.

The multi-year effort, which continues to this day, produced results beyond our fondest hopes. We consolidated back-office operations across the

system, such as construction management and internal audit. We began purchasing most commodities as a system, not as a group of 12 independent institutions. One of the biggest savings, tens of millions of dollars which continue to grow to this day, came from our purchase of energy through a single contract for all 12 institutions.

We formed MEEC, the Maryland Educational Enterprise Consortium, to leverage our scale in the purchase and licensing of educational hardware and software. We invited the community colleges and the K-12 sector into the consortium. Last year alone, MEEC has enabled a savings of \$10 million in hardware purchases and \$8 million in software purchases. The total savings since MEEC's inception is in nine figures.

Based on the success of MEEC, our 12 libraries came together to form the University System of Maryland and Affiliated Institutions. Its mission is similar to MEEC's, namely, to provide unified, cost-effective and creative approaches to the acquisition and sharing of information and knowledge resources across our 12 libraries, including cataloging services, collection sharing, electronic content licensing, interlibrary loan, preservation and storage. This consortium has produced similarly impressive savings.

On the academic side, the USM Board passed policies limiting majors to 120 credits, requiring students to earn at least 12 credits outside the traditional classroom, and requiring faculty, on average, to increase their student contact hours by 10 percent.

The results are pretty impressive. To date, we've documented more than \$460M in base budget savings. Graduation rates are at an all-time high and average time to degree within USM is down to 4.2 years.

We annually package our E&E results into a report and give it to the Governor and the General Assembly. Three years after the start of E&E, the very same governor who had cut our budget in 2002 called a press conference and said, "I now believe \$1 invested in the USM produces a dollar's worth of value for the citizens of Maryland."

Our E&E effort has changed the dynamic with our state government. USM became a priority for state funding and when a new governor, a democrat – Martin O'Malley, was elected, the support continued. Over the past eight years, we have been treated as a priority for state funding and we weathered the Great Recession better than most if not all other state systems of higher education. In fact, the trust was such that the governor would "buy down" a portion of our proposed tuition increases by adding

state funds to our budget. As a result, our tuition has gone from being the 7th highest in the nation to the 26th highest.

The E&E effort has been profiled in national and regional publications. One was the *Washington Monthly*, which referred to it as the “Mid-Atlantic Miracle.” E&E was also recognized by the Department of Education, and singled out by President Obama as a national model.

So what are the lessons learned from E&E. First, there are genuine savings to be had if institutions are willing to collaborate and take advantage of the buying power of economy of scale. And these savings can translate into a reduction in the cost of delivering education.

Second, there are tremendous public-relations and public-support gains for higher education through well-documented efforts to address its cost through collaborative efforts across higher education institutions.

Let me now turn to what I feel is another important topic, new degree pathways.

New Degree Pathways.

Once upon a time, students earned four-year degrees by going to a single institution and staying there until they walked across the dais on that campus with sheepskin in hand. Today, such students are in a small minority. The vast majority of students earn degrees after attending at least two and often more colleges and universities. Unfortunately, higher education has not responded adequately to this new reality. Students face loss of credits and other obstacles when they transfer, thereby adding costs to their education and to the institutions they attend.

This phenomenon is especially prevalent for students who start in community colleges. I am a huge fan of our nation's two-year schools and believe they are playing a critical role in holding down the cost of education. But it is essential that those of us in the four-year sector work closely with our colleagues in the community colleges to ensure as seamless a pathway as possible for students who start at their institutions. My impression is that Virginia has done a good job in this area. It is something we work hard on in Maryland. Starting with degrees in especially high-demand areas, like nursing and engineering, we are bringing faculty from the two- and four-year sectors together to align curriculum and course content to ensure that students who finish the AA degree in these fields really do enter our four-year institutions fully prepared for their junior years.

What I want to focus on, however, is a different kind of pathway. It's the pathway to meeting general education requirements in quantitative literacy. Now, I'm a mathematician, and it pains me to say this, but my discipline has become a huge impediment to college completion. This is so because the collegiate requirement for quantitative literacy has largely been accepted as college algebra, a course most non-STEM majors will use little if ever elsewhere in their studies. But, in this era of big data, there are rigorous beginning mathematics courses that would be very relevant for their majors, such as statistics and mathematical modeling. Out of this simple observation a movement is growing called Quantway, largely originated by Uri Treisman, a mathematician at the University of Texas at Austin. I have become a big believer in Quantway, so much so that I convened K-12, community college, USM leaders and mathematicians from across the state to discuss the abandonment of college algebra as the default requirement for non-STEM majors and the creation of unified alternative pathways for meeting the General Education math requirement at higher education institutions statewide. This has been done successfully in Texas, Ohio and Georgia.

The model we will follow statewide to create multiple pathways for quantitative literacy was created at the University of Maryland, College Park. Under this model, students who previously would have spent a semester in a

non-credit bearing course, now go into a course that meets five times a week and spend the first five weeks on remedial topics. The next 10 weeks are spent in one of four credit-bearing alternative pathways courses: Statistics, Elementary Modeling, Probability, or College Algebra. The pass rate in the courses is a remarkable 85 percent and this course meets the university's General Ed mathematics requirement. Needless to say, our colleagues in K-12 and the two-year sector are enthusiastic supporters of this initiative, which I am convinced will make a measurable difference in college completion rates and costs over time.

Innovation in Course Delivery.

This brings me to the focus of my remaining remarks, the potential for what many call Highly Interactive Online Learning (HIOL) to address our college completion and cost issues.

I genuinely believe that innovation in course delivery using HIOL, adaptive and interactive learning, while not a silver bullet on its own, can be the catalyst for addressing America's serious and potentially destabilizing educational deficit.

As you know, we are seeing advancements in technology that we have only just begun to exploit. The reach and speed of communications technology

combined with the adaptability and flexibility of intelligent software has transformational potential. For higher education, we are beginning to see a whole new world of sophisticated online learning platforms and innovative classroom approaches. We are also seeing the “blended” approach—sometimes referred to as the “flipped classroom”—in many K-12 settings as well.

Complementing the technological advances are advances in cognitive research over the past few years, dramatically increasing our understanding of how people learn, process, retain information, and acquire “expert” thinking. These advances are beginning to inform the development of adaptive learning and course management platforms. Moreover these technologies and strategies promote active student engagement, collaboration, and social interaction—which have long been considered important to improved learning outcomes.

The potential of this new world we are entering with HIOL is the most exciting development I have seen in my 50-year career in higher education and makes me wish I were at the beginning of my career, not at the end.

It is imperative, however, that as we consider the potential for technology-driven change in teaching and learning that we separate the hype from the reality, clarify our terminology and “right size” our expectations.

Technology does not represent—and cannot be looked to as—some sort of “magic bullet” to fix all by itself the ills in undergraduate education. There is incredible potential, but it would be a fatal mistake to cast aside every element of the traditional approach and start anew.

Currently, far too much of the academic innovation discussion focuses on Massive Open Online Courses—or MOOCs. From TED talks to Tom Friedman articles, we’ve witnessed the meteoric rise in claims about the potential of MOOCs to solve all of our higher education problems. And we’ve watched this euphoria dashed as the hard reality of translating the MOOC potential into more high-quality degrees becomes ever more apparent.

Unfortunately, for many, “MOOCs” are being used interchangeably with the larger, umbrella concept of HIOL, which certainly involves a web-based component, but also enables much greater collaboration and supports access to much more robust content than MOOCs have delivered to date.

From my perspective, however, MOOCs continue to hold enormous potential as one arrow in higher education’s quiver to expand college access and

completion, while addressing cost issues. I view the current stage of MOOC development as MOOCs 1.0. The technology and its potential, I firmly believe, will rapidly evolve. I suspect that by the time we get to MOOCs 3.0, we will have a powerful and locally adaptable means of high quality education delivery.

As I noted a moment ago, the widespread use of HIOL in no way signals the “end” of the traditional university, but rather represent a means for fundamental change in instructor-student interactions, a change that I believe can improve the quality of learning. HIOL offers the exciting potential for evolving the longstanding and increasingly outmoded “sage on the stage” instructional model to more active learning paradigms, often referred to as “the guide on the side.”

But here I want to utter a strong word of caution. As we use HIOL in an attempt to increase capacity, quality, and college completion rates, we must insist on evidence that new course delivery strategies actually improve learning outcomes, that costs are at least moderated, that quality is maintained or enhanced, and that the very populations we are trying to reach—low-income and underrepresented minority populations—are in no way compromised by the new teaching and learning strategies.

Getting higher education to “rethink” its approach requires persistence and patience. We need to set reasonable expectations, provide incentives, find internal champions on our campuses, and recognize and reward success. Following that approach, I firmly believe we can build the critical mass needed to implement lasting and effective change.

This is certainly the approach that we have adopted in Maryland.

The USM was an “early adopter” of course redesign; in fact, to the best of my knowledge, we were the first university system in the nation to take advantage of the capabilities of technology and innovative educational techniques to redesign entire courses across the system—not just individual classes or sections on a campus. Using a variety of strategies and working with the National Center for Academic Transformation, Carnegie Mellon’s Open Learning Initiative, and others, the USM has to date redesigned or reengineered more than 80 courses enrolling close to 25,000 students, turning them into technology enhanced, active learning classrooms. We have documented improved outcomes and diminished costs. In addition, we’ve provided the support to enable our state’s community colleges to reengineer another 30 courses.

Our patient and persistent efforts to build interest and capacity for technology-driven innovations are paying dividends. When we started down this path eight or so years ago, we struggled to find faculty willing to engage in rethinking how new strategies could improve learning outcomes and contain growth in costs of course delivery. By making grants available and promoting successful efforts, we have built a critical mass of faculty across the system willing to embrace change.

While we are proud of our efforts, I must say that I feel we have only put our toe in the sea of change that needs to occur. We and higher education in general, must focus much greater effort on understanding how we can take promising developments in HIOL to scale, while ensuring quality, lowering costs, and serving more students.

As I close my remarks, I want to again underscore the basic reason I believe the investment of time and energy on cost containment, new degree pathways and HOIL is so vitally important. Education beyond high school has become indispensable, not just for individual success and prosperity, and not just for our nation's long-term economic security and global leadership. If we do not accelerate our efforts in a coordinated, systematic way to get more young people into—and through—postsecondary education, we are consigning a large swath of the next generation to a grim future. This is

especially true for low-income, non-traditional, and first-generation students. In today's America, where higher education is the gatekeeper to the middle class, to economic and social stability, and to a higher quality of life, we simply have to do more to make sure the doors of opportunity are open to ALL our citizens and make the American Dream a reality for the very populations who have seen that dream become a nightmare.