



**North Dakota State University
State of the University Address
President Dean L. Bresciani
Thursday, September 30, 2010
11 a.m. • Festival Concert Hall**

State of the University 2010 video (<http://www.ag.ndsu.edu/media/pr/address2010.html>)

Thank you students, faculty, staff, alumni and friends for joining me today - on my third month, second day and now third hour as the president of NDSU ... not that I'm counting.

Before I arrived at NDSU in June, an editorial cartoonist drew this caricature of me being given a roll of wire and some pliers, with the idea that my job would be about mending fences across the state. Fair enough. NDSU had been through some rocky times in the months before that. I have to admit for a moment, I thought, what the heck have I gotten myself into. But let me clear something up right away. I didn't need pliers and I didn't need wire. What I've found all across North Dakota are people who believe in what we do here, who want our good work to continue, who want us to increase what we do, and, more specifically, want us to increase what we contribute to North Dakota and the people of our state.

A fence is an interesting metaphor for me today, but in a much different way. As it turns out, there's a fence at the beginning of our university's research tradition.

In 1906, chemist Edwin Ladd - who was one of the first four faculty members here - began a project that involved systematic application and testing of paint on fence planks. That paint research has evolved into the development of applications today, that were unheard of, frankly, undreamed of at the time. It is one of many provocative examples illustrating the kind of progress and contributions that research - and a research university - can make to the state and the people we serve. What started on a fence more than 100 years ago has now become our hallmark coatings and polymeric materials program. It brings attention to us not only from our academic peers, but external funding agencies ranging from NASA to the Department of Defense. And that is just one example.

Thinking back, I have to ponder whether Professor Ladd could have imagined that the paint he was studying, and the planks he was painting, were the start of an enterprise that would become recognized by the National Science Foundation as one of the country's top 100 research universities.

I wonder if anyone at the time imagined an NDSU that would be recognized as one of the most productive and exciting universities in the nation for plant genetics and hybridization; for Nano-technologies such as printable and flexible electronics, liquid silicon, Nano-fibers; for photo-voltaic; or for our emerging fields of vaccinology; visual neuroscience; and robotics and bioengineering.

In fairness to Professor Ladd and his colleagues of the day - those fields of discovery didn't exist. Perhaps they couldn't even be imagined. But what if they had?

Along those lines, I'm going to ask this morning that you take a leap of faith and imagine something with me. Imagine for a moment what the next 100 years might bring. Imagine for a moment what NDSU might be on the forefront of 100 years from now if we continue on the path we are on, and continue to draw national attention, resources and benefits to North Dakota and the people we serve.

What if, in 1906 when Professor Ladd was painting those strips of fence and documenting the quality of the paint, he knew his work could lead to a breakthrough technology for aircraft coatings, or transparent armor to protect soldiers? Well, it has.

If history has taught us anything about the impact of a research university, it's that an idea can provide a solution to the unsolvable and make differences that literally save lives.

Sitting here today in the year 2010, imagine what we could do for the North Dakota of 2110, if we capitalize on the unique opportunities in front of us now.

In countless settings across the state, I've described that combination of opportunities as an alignment of the stars never before experienced in North Dakota. We are facing a window of opportunity that is open today, but it will in fact close on a foreseeable

timeline.

- We may never have the opportunity we do now to reposition perceptions of North Dakota and North Dakota State University,
- We may never have the opportunity we do now to catapult the economic vitality, diversity and competitiveness of our state past others in the nation,
- And, to enhance its attractiveness to not only the young North Dakotans who are our future, but also to the best and brightest minds of people throughout the country and the world,
- People who are starting to look at North Dakota in a very different way.

When I interviewed for this position, Barry Batcheller, a serial entrepreneur and key partner in the NDSU Research and Technology Park - in other words a very smart guy - asked me to talk about where I thought NDSU should be in 15 years. That was a very good question, and we had an interesting discussion around my response. But for today, let's think in even longer and bigger terms.

North Dakota has attributes no other state has right now. At this moment, most other states are choking on budget deficits and suffering painful levels of unemployment.

The two states in the nation with the largest and arguably most elite higher education systems in the nation - California and New York - are experiencing rampant inflation, state budgets in complete disarray, spiraling costs of living, and the need to decimate their higher education systems. In fact, the University of California-Berkeley just last week announced it is cutting another 200 jobs; that will total 800 positions lost there in the past year. Progress is out of reach for them, for now.

North Dakota, on the other hand, is becoming a hotbed of economic vitality spurred on by higher education, because of a variety of very unusual factors we enjoy, such as:

- The third highest per capita percentage of college educated young people,
- Increasing research being produced at not just one, but the two flagship research universities making up the visionary Red River Valley Research Corridor ... both of which are drawing steadily increasing funding and support from outside of the state and even the nation;
- A deserved reputation for the work ethic of the people here, and great living conditions that include almost non-existent levels of unemployment and crime, and one of the best k-12 education systems in the nation,
- Fargo being named one of the top college towns in the nation in a variety of recent national publications.

In fact, at the North Dakota Higher Education Roundtable just weeks ago, three different national speakers, invited by State Representative Bob Skarphol - who chairs the Legislature's higher education committee - shared data indicating that we enjoy one of the most accessible, affordable and efficient higher education systems in the nation. And they pointed out that with increased support, our state's flagship research universities could be doing even more.

North Dakota is staring at the opportunity of the century. For the time being, North Dakota has a competitive advantage that few if any of our peers can match.

- What can we do?
- What should we do?
- What will we do to make sure we don't let that opportunity slip away?

We know that higher education is a powerful way to expand the economy of a state, diversify the tax base and create jobs. We do that by creating the new knowledge, that leads to new technologies, that lead to new businesses, that lead to new jobs.

At the same time, we honor our historic mission and focus, on educating students, and, in partnership with our North Dakota University System undergraduate institutions, we train the workforce that is the future of our state and its economic strength.

We know that ideas are incubated at a research university. Research universities combine intellectual capital, resources and vision so ideas can become realities that make lives better. Our own efforts at the NDSU Technology Incubator have already supported 16 business start-up ventures since 2007. And, more than 600 people come to work in NDSU's Research and Technology Park each day.

In recent years, new companies that got their starts at NDSU include Phoenix International, Aldevron, Appareo Systems and Pedigree

Technologies, just to name a few. People in North Dakota are already flourishing in technologies and jobs that didn't exist just years ago.

We know about the successes other states have experienced when their leaders have chosen to invest in research universities. In the 1950s, for example, North Carolina realized its agriculture-based economy was at risk, and turned to its research universities - the University of North Carolina at Chapel Hill, North Carolina State University and Duke University - to create the Research Triangle Park, now one of the top five research centers in the United States.

And we aren't alone in recognizing how important a research university like NDSU can be to the future of our state. In fact, North Dakota's Commerce Commissioner, Shane Goettle, recently identified five strategic initiatives as key to our state's future success; one of those was investment in university-based research.

Moody's Investment Services, one of the leading national credit evaluation firms in the nation, has similarly identified higher education as one of the state's most important economic engines, and has specifically cited NDSU as the number two most influential factor in our state's economy, second only to overall agriculture.

Let me repeat a very important point; we have a window of opportunity. It's eventually going to close, but right now, today, we can decide to change the fate of North Dakota 100 years from now.

We will certainly continue to support the North Dakota we know and love no matter what, but we have a window of opportunity that may never exist again to reposition North Dakota through the work we do here. Nobody else can contribute what we can. Nothing else can change the future like we can. Nobody else and nothing else can improve the lives of North Dakotans like we can.

The question is: Are we going to have the vision to see how NDSU could broaden and strengthen North Dakota's future? Are we going to seize the day?

We also need to appreciate that much of North Dakota as we know it today wouldn't exist if we hadn't been here. Let's really think about that for a few minutes. Would North Dakota be different without NDSU?

Some might argue no, and that we'd be an agricultural state. They'd argue that's our tradition, and will always be. Or they might argue we'd be an oil state. That's been our tradition and will be for at least several decades to come.

But the reality is that, without major agricultural science breakthroughs throughout NDSU's history, we would not be a successful agricultural state. Our crops would have fallen prey to disease and pests, such as the Fusarium Head Blight that as recently as 2005 threatened our wheat and barley crops.

Instead, NDSU plant pathology researchers like Marcia McMullen, among others, have perpetuated and enhanced the industry to its status as a national and international leader in producing great harvest of the world's highest quality crops and livestock, resulting in billions of dollars in direct and indirect benefits to our state via development of numerous crop varieties and remarkable advances in animal and crop production systems.

In the early days of the North Dakota Agricultural College, Professor Henry Bolley established research plots for studying flax, devised innovative disease control strategies and developed the disease resistant "Bison Flax" which provided the linseed oil for the paint tested by Dr. Ladd, on that fateful fence I referred to earlier. I have to mention that concurrently, Professor Bolley organized the first football team here and challenged the University of North Dakota to play.

I don't mind also mentioning that we won our first two games, which were against UND, played that initial season of 1894. Won't it be interesting when, some day in the future, history repeats itself?

In the 1940s, working in the same plots, Dr. Harold Flor, a USDA scientist who also served as an NDSU professor, devised the "gene for gene" hypothesis. That became a seminal moment in understanding pathogen-host interactions, and is the basis for much of today's disease treatments in crops, livestock and even humans. In that tradition, our scientists have continued to develop crop varieties that are in many ways standards of the world.

In recent years, spring wheats, produced using NDSU varieties, have resulted in sales by North Dakota farmers exceeding \$1.5 billion annually. Additionally, most barley, dry beans and durum wheat produced in North Dakota - the leading state in the U.S. in production of each of these crops - come from NDSU-developed varieties.

Today, just north of Professor Bolley's plots - which have been planted to flax each year since he established them, and which are on the National Registry of Historic Places - a state-of-the-art greenhouse complex is emerging. It will be the only one of its size and scope in the nation, and it will put NDSU scientists at the forefront of keeping North Dakota's largest industry a world leader.

Agriculture is not our only area of excellence. For example, our emerging life sciences research efforts are leading to treatments for diseases, and our Nano-materials research is leading to the development of better materials for people who need injured joints replaced, and less toxic ways to detect and treat cancer.

Many of us probably remember the popular 1970s TV show, the Six Million Dollar Man. The premise of the show was at the time considered silly, but just maybe that notion was not so silly after all!

Will NDSU in the future perhaps offer solutions to disfiguring and disabling injuries? Based on our advances in flexible electronics, Nano-technologies, robotics and polymers, will NDSU perhaps be at the forefront of technologies and applications that provide fully functioning replacement limbs for the human body? One can only imagine.

But it's not just our faculty who are on the cutting edge of discovery. Our students too are achieving those levels. For example, Cody Gette, an NDSU physics and math student from Devils Lake, recently received a \$10,000 NASA scholarship. He's been working at NDSU's Center for Nanoscale Science and Engineering as an undergraduate researcher in the laser lab. What might he soon discover?

And it goes without saying that our success, literally from the time campus doors get unlocked in the morning, to when the lights go out at the end of the day, and throughout the night in between, all hinges on the commitment and hard work of our staff. They are the unsung heroes of our success, in quiet and often behind the scenes roles that, nonetheless, are critical to what we do for North Dakota.

From a different perspective on the reach and impact of NDSU, without the NDSU Extension Service, communities across North Dakota would not be the same. The Extension Service meets the needs of the agricultural and agribusiness sector, families and children and 4-H, with more than a half million face-to-face contacts with North Dakota citizens annually. In the last couple of years, through the Horizons Program, the Extension Service has facilitated long-term visioning and planning for 44 communities - most of which had 500 or fewer residents.

The Extension Service is also working throughout western North Dakota to help communities solve the challenges that are emerging from the rapid expansion of oil drilling and production. That assistance includes development of adequate housing, helping non-English speaking newcomers adapt, and helping communities accept newcomers openly and effectively.

The truth is, if NDSU hadn't been here the past 100 years, we would probably not recognize the North Dakota of today. Our state's agricultural industries might not exist, the educated and entrepreneurial work force of North Dakota would be smaller, the tax base would be narrower, we would have little capacity to broaden the state's economic base, and there would be very little hope for improving any of that in the future.

Even with the current vigor provided by energy exploration in the west, we would have nothing to invest that opportunity in, much less a reason to anticipate a return on that investment. Please note that I very purposefully use the term invest rather than spend; the former leads to a return - the latter does not.

We also have two research universities that can draw substantial numbers of young, bright minds from inside North Dakota, as well as from outside the state. And you will see us increasingly collaborating with our sister flagship university to the north, as we seek to better support and serve the people of our state. By capitalizing on and combining the unique strengths and specialties of our respective institutions, we will do our jobs better and in a way never before experienced in North Dakota.

However, if we fail to act, we can expect no new jobs outside of our traditional agriculture base; no reasons for more young people to stay here to raise their families; no reason for more new people to come here; and once the oil runs out, we will be a state with one industry and fewer and fewer people to maintain it.

Simply put, the limitless future we now have in front of us will instead be a dark and dire frontier. We cannot let that happen.

NDSU's evolution over the past decade has reflected its increasing productivity, visibility and contributions to ever-broadening constituencies. Success in doing so has led to a consistent and dramatic increase in the level of demand for the university expressed by prospective students, scholars and business leaders not just in North Dakota, but throughout the nation and even the world. For 11 years in a row now, and reflecting our new reputation, enrollments have hit record levels.

In fact, it has been argued that, if anything, we are a victim of our own success. And although finding adequate resources to meet demand is a serious problem, I'm going to call the challenges we face to maintain our increasing success a good problem, and one that ultimately offers a strategic opportunity to better serve the state.

One of the very important attributes of NDSU, and an attribute that is often not understood, is that students from outside the state are

so excited about NDSU that they are willing to pay more to be here than in-state students do. That includes Minnesota students who, in spite of our reciprocity agreement, actually pay more than our in-state students. And we know that many of those out-of-state students, whether from Minnesota, other states, or other countries, are statistically likely to stay in North Dakota after they graduate because they enjoy being here, and we are creating new jobs for them.

Regardless of where they are from, our students are part of diversifying the economy of the state beyond the traditional base as they pursue jobs with firms like Aldevron. Aldevron was started in a small lab at NDSU by 1997 alum Michael Chambers and a doctoral student from New Zealand he met here. They are some of the early entrepreneurs developing the emerging vaccinology industry here. That new North Dakota industry has now drawn internationally recognized vaccinologist Satish Chandrasekhar to NDSU. Without NDSU's research focus, those jobs wouldn't exist, and those people from both in and outside of the state wouldn't be drawn to North Dakota.

That's particularly important in a state with a dwindling population of young people, a trend which if not reversed will have dire consequence for the future of our state. But instead, the future of our state is at a point of awakening - and our imagination is the only limit to the future.

We are the ones poised to make that future a reality.

NDSU already commands a powerful niche. We are unique in how we successfully balance our roles of being student-focused, land-grant, research university, and that makes us distinctive among our peers. Most of them sacrifice one if not two of those responsibilities in a quest for resources and prestige. We, however, take great pride in maintaining our excellence in all three, and that is part of what makes NDSU the distinctive model of higher education we represent.

As a research university, we introduce our students to the process of discovering new knowledge that better prepares them to be the next generation of entrepreneurs and business leaders. Nothing is more exciting for a faculty member than, when describing the frontiers of knowledge, they see the lights go on with students, and students lean forward in their chairs and ask, "What if we tried this?" or "Do you ever think there'll be a day that we can?" That is the real heart and soul of education at a research university.

And at NDSU, students are directly involved in research and international opportunities from Antarctica to Africa to Samoa. Our students regularly co-write research articles, and they are frequently co-inventors on NDSU patents. Such research opportunities provide students not just a great educational experience, but advantages as they compete in the job market.

To continue our success, we'll have to start making hard decisions about where we can excel. Those will require sober identification of where we truly excel now, and where we are most likely to excel in the future. We cannot simply hold steady on all fronts; that will only serve to marginalize our potentials.

Those will be challenging discussions for sure, but if we are to honor to our responsibility to excel, and our responsibility to chart the destiny of North Dakota, can we do anything but face those difficult decisions? From my perspective we have no choice.

We are already world-class leaders in some areas. But we must also work to identify our strengths in the specific niche areas that hold the most promise to fulfill our mission to our students and to our state, and excel at them.

My goal as president is focused on getting the support you need to excel at your work. That requires us to successfully communicate and demonstrate the value and applicability of what we do, and how it benefits state - as well as national and international constituencies.

To put it succinctly, NDSU cannot be considered a "cost" to North Dakota, we must be considered an investment. And for us to be successful, it goes without saying that we need to be recognized and supported similarly to our university peers around the nation.

It is ironic that most of our NDUS sister institutions enjoy a level of support closer to or soon to be in excess of their peers, while the two flagship research universities do not. As major economic engines of our state, and the most likely factors in changing North Dakota's future, I find that troubling, if not indefensible.

I'll also be seeking the capacity, as a steward of critical state assets, to responsibly and better maintain our physical facilities. Most are in a condition that threatens our productivity, and wastes valuable state resources. And I am pursuing additional resources that will allow us to initiate and catalyze the programs and contributions that will change the fate of North Dakota in ways that we in fact may not have yet even imagined.

To wrap things up this morning, let me leave you with a final observation: we are uniquely positioned as a truly student-centered, land-grant, research university. And we are people of great fortune to be here, at a research university that can and does make life better. We are people who believe in the mission of our institution and, I have to tell you, I've never seen people more willing to

change for the sake of the greater good.

What makes us unique in higher education, what makes us unique within the North Dakota University System, and what makes us unique in this region and indeed in contrast with any university in the nation, is that we remain committed to our heritage. We're proud of that, and that we're solving the problems of today and imagining solutions to the problems of tomorrow. We are NDSU - North Dakota's student-focused, land-grant, research university.

We are our state's future.

Before I close, I want to tell you how much I appreciate the welcome I've experienced.

Thank you to our students, alumni and fans who joined me in Lawrence as we drew national attention to NDSU by beating the University of Kansas in football.

Thank you to the student who jumped out of his truck as I walked home from my first day on the job, because I looked like "that guy!"

And to the international students who asked to have their photo taken with me during new student orientation, and to the countless students who have e-mailed welcomes and congratulations to me as the new president.

Thank you to the many faculty and staff members, and particularly our distinguished scholars, who have offered their support and guidance.

And thank you to the wonderful people I've met all across the state ... like those at the Red Rooster café in Crosby, N.D., who state Senator John Andrist introduced me to over breakfast. They are who we serve, and they clearly appreciate what we do.

Last but not least, thank you all for welcoming me into the Bison Family, and for being here and throughout the state joining us by webcast this morning, to imagine where North Dakota State University will be not just tomorrow, but in the next 100 years.

Now let's go paint some fences ...

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