

BUCHANAN LECTURE
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I am both sorry and proud to speak through a mask. President Seidel and Provost Alexander have implemented a thoughtful, principled approach to managing a terrible pandemic. My mask is in part a tribute to their leadership.

Before going further, I want to express deepest gratitude to my colleagues in the Department of Mathematics and Statistics. As I worked through the academic ranks, during my years in the thickets of university administration, and after my return to the rank-and-file professoriate, these men and women gave me the best possible academic home. Even when I was provost—the Darth Vader of academia—they never wavered.

I don't just mean they were nice to me. They helped me grow as a teacher. There are ways that mathematics should be taught and ways that people commonly teach it. My colleagues know the difference. Being a part of this community of scholars has been the most sustained reward of my career.

I can't deliver an address like this without thanking Adele. We met on a ski trail in 1987. When I saw her ski, I was smitten. We've been on the trail together ever since. Adele has endured my many idiosyncrasies, which I have no intention of enumerating in public. If you know Adele a little, you know that she is sparing with words. If you know her well, you know to listen.

I learned many lessons at UW. Of course, I learned a lot of mathematics. Some of it I and my graduate students discovered through research. I also made a habit of teaching courses that I never took as an undergraduate or graduate student. I loved those courses.

UW taught me many things about myself, about other people, and about higher education more broadly. I want to focus this talk on three lessons that I learned about higher education. The third lesson addresses my title, what the University of Wyoming can be.

In the first lesson, I learned a seldom-articulated fact about how people learn. Many of you know that I'm in thrall to the mountains. One Saturday, when I was an associate professor, I launched into the Snowy Range on skis, straight into the maw of a swirling, face-pelting whiteout. Most Wyoming residents know this phenomenon intimately, if not from skis or snowshoes then at least from their windshields.

On that blustery Saturday, as I scurried for the shelter of spruce-fir timber, an indistinct figure approached me in the mist. When he was within earshot, he said, "Professor Allen, I know you don't remember me." On the contrary, I did. Five years earlier, this fellow had spent many hours in my office, one-on-one, late in the semester, struggling to scrape out a passing grade in Calculus I. He had already failed the course twice, under other professors. In my course, he had a nearly unsalvageable F average going into the final exam.

I liked this guy. He was earnest, engaging, and brutally self-aware about his difficulties. Math intimidated him. As a result, he spent so little time studying calculus that, to him, it was a complicated wilderness. I gave him some recommendations for how to study, but I leveled with him: His prospects for passing were slender. I'd love to see him pull it off. But waiting until the end of the semester had been the wrong strategy.

On that blizzard day in the backcountry, my former student told me, "I just finished my engineering degree. It's all because of you." Utterly perplexed, I reminded him: "But I gave you an F!" He replied, "Yeah, but you wanted me to pass, and the next semester I did. And then I passed Calc II and III, and then circuits, and then fluid mechanics. I graduated last spring."

At first, I wrote this exchange off as an extremely polite chance meeting. UW undergraduates are the politest people in the world. But it wasn't a chance meeting. The newly minted engineer could easily have avoided me. In an abject whiteout, even the nicest Wyomingites do not, out of sheer politeness, seek out the third person in a row to give them an F in calculus.

Eventually, I understood what my former student was telling me: "I succeeded once I knew that somebody wanted me to."

It took me years to grasp this lesson. But now I get it: **People do better when someone wants them to succeed.** There is no more important principle in our profession. Every good parent knows it's true for toddlers. We're not so different. The principle holds for college students, PhD candidates, new assistant professors, department heads, and college deans. It holds for provosts and presidents. It holds for trustees, whom we should all desperately want to succeed as governing-board members. **Every person on planet Earth deserves to know that someone wants them to succeed.**

I learned the second lesson a little later: **You can't be smart without other people.** It is a common conceit that higher education is all about being smart. As a result, we treat being smart as a personal trait. There is no denying that personal attributes like curiosity and persistence help. But, in the end, being smart isn't about who you are; it's about who's with you.

Nobody knows or teaches this lesson better than Tom Buchanan. This being a Buchanan Lecture, I hope you don't mind my embarking on a tangent.

Tom is really smart. According to conventional wisdom, he could have operated as provost and then president by telling his direct reports exactly what to do. He never did this. Instead, he conducted what I call "huddles:" two- or three-person gatherings, typically after hours, when we worked through difficult situations and argued about conceivable solutions. During those huddles, he may have been the smartest person on the team, but he knew that the team was smarter than the person.

Tom frequently handed me a binder-clipped stack of documents involving some tricky problem, writhing with legal and ethical landmines. These little gifts always came with a four-word sticky note saying, “M: Please handle. TB.”

He expected me to succeed, and, to my own astonishment, sometimes I did. But, having learned from Tom, I never tried to handle those problems alone. Working with Tom taught me how to build and work with a team.

As some of you know from personal experience, not everybody liked my solutions. In the Office of Academic Affairs, problems land in your lap when nobody else wants to touch them with a barge pole. Recalling the argot of Vietnam-era soldiers, we called these problems “incoming.” In addition to working with a team, I had a few additional criteria. For truly radioactive problems, I had to be willing to explain my decisions, face-to-face:

- to the faculty senate,
- to the most withering of faculty critics,
- to the Wyoming Legislature, and
- to the press.

I never expected any of them to agree with me. I just wanted to make sure I had reasons that I was willing to share with them.

By example, Tom taught us all many other lessons. One was courage. He approved a plan for domestic-partner benefits at a time when many trustees—and most legislators—winced at the idea. I’m painfully aware that our plan didn’t completely solve the problem. But at the time UW had to do something, if only to remain competitive in faculty hiring. Fortunately, in 2015 the U.S. Supreme Court resolved most of the remaining issues in its Obergefell decision.

Tom also found a brave way to fund the second half of the fine-arts building project, now called the Buchanan Center for the Performing Arts. Characteristically, he assembled a team to develop a fiscally workable solution. Then he implemented it, over the explicit opposition of politicians who had already reneged on the previously agreed-upon state funding. **No building at UW is more aptly named.**

Please bear with me for one other tangent. I want to reflect, for a moment, on the people whom I worked with in Old Main. I do not regard myself as a natural candidate for university administration. For one thing, I don’t like the way some academic administrators think. I participated in many national meetings of administrators, eventually as a mentor to new provosts. I saw many bright lights flicker once they took their new jobs. For reasons I can only speculate about, when accomplished academics become administrators, some of them abandon their fine-tuned critical capacities in favor of mind-numbing, formulaic problem-solving—as if jargon could replace painstaking thought. We have all witnessed this phenomenon.

Despite my initial misgivings about administration, I was privileged to work with an extraordinary team in Old Main. They included a dozen or so supremely talented staff members and some of the most accomplished academic leaders I ever met. They all valued honesty, civility,

and clarity of vision. Among them were award-winning staff members, some of UW's best former department heads, nationally recognized scholars, and recipients of the Trustees' Merit, Ellbogen, and Humphrey awards. These exceptional women and men wanted the best possible future, not for themselves, but for UW. They worked their hearts out for us.

They exemplified my second lesson—the lesson about teams. We met in huddles long after the building was locked for the night. We argued, sometimes convinced each other, sometimes disagreed, and bought each other drinks to restore peace. The second floor of Old Main will never be the salons of eighteenth-century Paris, but we gave it our best shot. In the process, my co-workers became lifelong friends.

At last, I want to turn to the third lesson. In Wyoming, the flagship university means more to the citizens than in any other state. But UW can and should be more. To put a finer point on it:

The University of Wyoming has the capacity to be among America's 10 most admired land-grant universities.

I want to be concrete here. There are at least five attributes for which we can be admired:

- First, student access, with documentable public recognition as a role-model for this land-grant ideal;
- Second, a superior faculty, visibly committed to and nationally recognized for excellence in teaching;
- Third, internationally recognized research and creative endeavors, pushing the frontiers of knowledge and deliberately connected to the needs of our public;
- Fourth, degree programs that allow our students to start careers and achieve success anywhere in the world;
- Fifth, an intellectually meaningful sense of place rivalling that found at only a few of America's colleges and universities.

Realistically speaking, to reach this level of recognition will require us to set our sights high, to make our aspirations widely known, and to work hard for years to come.

In administrator-speak, I am proposing that UW completely overhaul its list of “aspirational peers.” Stop aiming for the middle. We've hired professors from top-ranked land-grant institutions, from the most highly respected federal agencies, from other flagship universities, and from elite private universities. UW graduates have succeeded in the world's most selective graduate programs and in the most demanding professions. We can do this.

I hope we can stipulate, in this audience, that this is a worthy path, not only for our students but also for Wyoming's future. Wallace Stegner, the dean of writers about the American West, once envisioned “**a society to match the scenery.**” If you think only about how UW is structurally positioned and what it might take to realize Stegner's vision, our prospects are encouraging.

- UW enjoys a rock-solid teaching culture. This fact impressed me when I moved into Ross Hall in 1983, having studied at two institutions that take pride in teaching excellence. But never was UW's commitment to teaching more apparent than in the spring of 2020. In that dispiriting time, Wyoming professors kept the educational mission alive, despite a rapidly spreading pandemic. Asked to turn on a dime, the faculty rose to the challenge. They never complained. Many universities struggled to stay right-side-up. Thanks to its teaching culture, UW succeeded.
- Faculty scholarship is strong. It could be stronger. But we have quite a few high-profile research programs that mesh well with Wyoming's geography, culture, resources, and challenges.
- In the past two decades, UW's research facilities have blossomed. The library is healthier than ever, and we have unique cultural and scientific collections. Thanks to forward-thinking state officials, faculty and students enjoy access to a leadership-class supercomputer, outstanding facilities for the fine and performing arts, and state-of-the-art science and engineering laboratories.
- The university maintains a strong sense of commitment to public service, not only through its extension programs but also through its professional degree programs, its public radio station, and its investments in distance learning.
- Admission to the university is nearly open. Low tuition and the Hathaway Scholarship program make the barriers to higher education in Wyoming among the lowest in the nation. Sadly, these attributes work against us in crude national rankings, which place indefensibly high value on exclusivity. More than any other American flagship institution, the University of Wyoming is the land of opportunity.
- With a single public university and a handful of highly effective public community colleges, Wyoming's higher-education architecture is the envy of every other state.
- The institution enjoys a sense of place. We owe it to a remarkable Outdoor Program, the Haub School, the Berry Biodiversity Conservation Center, expertise in the Earth and life sciences, and many other programs.

All that said, these assets merely show that the project is feasible. They do not yet suffice to place us among America's 10 most admired land-grant universities. To make that happen requires an explicit, public commitment and sustained effort. We must regard excellence as a path, not as an event.

This path bristles with hazards. Three require special attention.

The greatest hazard is the risk of stalling out. UW can stall out from internal leadership failures, ham-handed political interference, or a combination of both. **I suspect I'm ringing a few bells here.** As poet Dorothy Parker admonished, "It's not the tragedies that kill us, it's the messes."

Another way we can stall out is through a failure of state support. Wyoming faces hard decisions about its state budgets. These decisions will require rare political courage. But we can't duck them much longer without impoverishing the state's communities, especially its children. If we want Wyoming to flourish, we have to make it a state where moms and dads want to raise their kids.

The most successful of our peer institutions run as fast as they can. And they are quite open about their ambitions. They innovate in teaching and research, hire the best new faculty members each year, and often try to steal the best of UW's professors. To follow the path of excellence, neither Wyoming nor the university can afford even brief moments of stasis, chaos, or ambivalence about the value of higher education.

A second hazard on the path of excellence is the siren-like lure of distracting metrics. Behavioral economist Daniel Kahneman distilled the problem:

When faced with a difficult question, we often answer an easier one instead, usually without noticing the substitution.

An example illustrates the point, but it is far from unique. For university administrators, the easiest single attribute to measure is student enrollment. Yet no public university ever increased its prominence merely by increasing enrollments.

Look at the ledger. On the positive side, increased enrollments suggest expanded public access. Unlike many flagship institutions, UW explicitly wants to expand access. In my opinion, for public institutions in a democratic society, this is an ethical imperative. But the correlation between enrollments and access is far from perfect.

At UW, increased enrollments exert few if any positive effects on revenues. The reason is simple: Our tuition is an order of magnitude lower than the cost of education.

On the negative side of the ledger, increased enrollments mean increased student/faculty ratios. To students, professors become more remote. Even worse, as department heads know, rapid enrollment increases make it harder to deliver high-quality first-year courses—the make-or-break sector of the curriculum for many students.

I do not propose that UW ignore enrollment trends or avoid increased enrollments. I'm saying only that enrollment does not furnish a useful indicator of progress toward excellence. It distracts us from the real questions.

It is important to measure things. But we should maintain skepticism about metrics, especially the easy ones. Anthropologist Marilyn Strathern cautioned that "When a measure becomes a target, it ceases to be a good measure."

Some of us remember the Soviet Union and Soviet-style economic planning. It famously failed. Factory managers and farmers learned to game the numerical targets while contributing negligibly to the actual well-being of the Soviet people. The metrics answered easy questions instead of important ones. As a result, the Soviet economy was a house of cards. When it fell, political oppression was no longer the biggest problem. People couldn't buy bread.

A disturbing slice of American history reinforces the point. In 1962, Secretary of Defense Robert McNamara visited Vietnam. McNamara had honed his systems analysis skills at Ford Motor Company. He was one of the Kennedy administration's best and brightest. During his visit, he told reporter Neil Sheehan, "Every quantitative measurement we have shows that we're winning this war." Thirteen agonizing years later, America evacuated its Saigon embassy by helicopter.

In higher education, the most difficult attribute to measure is academic distinction. But this is precisely the attribute we must monitor to rank among the ten most admired land-grant universities. No single quantitative measure will do. The important questions are simply too multidimensional. How does UW stack up in teaching and research? What opportunities do our graduates enjoy? What evidence shows that the UW experience strengthens their capacities for precise reasoning, humane thought, just behavior, civic awareness, and leadership? We have to answer these questions, even if others are easier.

A third hazard, endemic in the Mountain West, is the trap of modest expectations. When I was an assistant professor, an associate dean of engineering asked why the math department used a certain calculus textbook, recognized nationally for its depth and rigor. He said, "we're training engineers for Wyoming, not for MIT."

I was stunned. Whether we can or do produce MIT-caliber engineers is a good question to ask, but there's no excuse for aiming any lower. We owe our engineering majors an education that enables them to excel at any job they want.

UW owes Wyoming—and the nation—the best engineers we can educate, the best chemists, the best nurses, the best attorneys, the best writers, geologists, artists, business leaders, public servants. The list does not end there. We owe our students—and our society—nothing less than reflective, caring, and rigorous teaching at the highest levels.

Excellence in teaching ought not be controversial. Less universally recognized is a second responsibility: UW owes Wyoming and the world a reservoir of world-class research expertise.

Our state faces a spectrum of thorny problems. They involve natural resources, our spectacular environment, the health of our citizens, economic stability, our changing climate, and the education of our children. We will not solve these problems using formulas pulled off the shelf by people who last saw the frontiers of knowledge decades ago in graduate school. We need creative contributions from thinkers who thrive on lifelong innovation and discovery.

In most walks of life, maintaining this level of expertise counts as a full-time job. But America enjoys an incredible bargain: At public research universities, professors conduct cutting-edge research as just one dimension of their duties, devoting most of their time to teaching.

Many years ago, an Amoco research lab tried to convince me to leave UW for a much higher salary. At the end of the first day of my interview, I learned that the lab closed at 5 pm, for security reasons. You can't impose that rule at UW. People can't be good teachers and ground-breaking researchers by working 40-hour weeks. Being a professor is a demanding job.

To follow the path of excellence, UW must push even harder on its research mission. In addition to its great teaching culture, the institution must play a more prominent role in advancing the state of the art.

Of special importance is the doctoral degree. Training a PhD student is a risky venture—a one-on-one apprenticeship in discovering the unknown. Here, no bright line separates teaching from research. I call it teaching without a net. UW will be a better and more widely recognized institution if this mode of education occupies a greater role in the institutional portfolio.

Increased emphasis on PhD production need not come at the expense of baccalaureate education. As most elite institutions recognized over a century ago, vibrant doctoral programs not only address an important worldwide need. They also support a cascade of knowledge within the curriculum—a cascade that enhances the undergraduate experience in classrooms, seminars, and laboratories.

The last hazard that I want to discuss today is much more controversial. It is the hazard of wavering in the university's commitment to the truth. In case you haven't noticed, truth is under attack in many realms of public discourse. In my opinion, this issue is the most pressing crisis of our times. In this crisis, universities must remain safe harbors for open, honest, critical inquiry based on stubborn adherence to facts and reason.

Some blame the internet for this mess. This assessment has some justification. Three decades ago, many naïve people, including me, hoped that the internet would usher in an era of freer exploration and greater access to the truth. Inspired by Wyoming's native son and Grateful Dead lyricist John Perry Barlow, we thought the electronic frontier would enable the "marketplace of ideas" to thrive as never before.

We were wrong, for a reason that every mathematician should have anticipated. The universe of falsehoods is vast compared with the universe of truths. To make matters worse, people who are infected with hate or who have something to hide have many reasons to prefer falsehoods over truth.

Still, the internet *per se* is just a tool. It has many uses, one of which is to repeat falsehoods prodigiously. Here, again, Daniel Kahneman provides insight:

A reliable way to make people believe in falsehoods is frequent repetition, because familiarity is not easily distinguished from truth.

“Marketplace” is the wrong metaphor for the internet. “Megaphone” is closer to reality. People are the real problem.

These days it is tempting to blame the internet-mediated distortion of truth on the political right. Kellyanne Conway’s phrase “alternative facts” and the recent bizarre myths about COVID vaccines both exemplify the problem.

But the academic left also has much to answer for. In the last half century, philosopher Michel Foucault doubted that one could ever distinguish facts from values. His thinking inspired a generation’s worth of academic treatises, many of them left-leaning, that arguably made the “post-truth” era possible.

A civilization faces grave peril the instant it comes untethered from the truth. The university’s audience—not just the state of Wyoming but society at large—deserves far better, especially from its professors. Philosopher Alfred North Whitehead got it right: “The task of a university is the creation of the future, so far as rational thought and civilized modes of appreciation can affect the issue.”

No less than any other state, Wyoming needs an institution that seeks and nourishes the truth. We may argue at length about what is true. We may explore widely and freely with our minds. But, as teachers and scholars, we must never dismiss the facts. Never abandon logic. Never allow uninformed opinions or oft-repeated myths to dominate. Never lie.

This mission will require courage on the part of professors and an ironclad commitment to academic freedom on the part of administrators. It will require firm adherence to the principles of academic tenure. I wish thought these elements were straightforward to sustain. I hope UW will do so.

The late Professor Arnold Ross at Ohio State University taught hundreds of high-school-aged mathematicians an enduring lesson: **Think deeply about simple things.** Here is a terse prescription for what the University of Wyoming can be: **Move forward. Aim high. Honor the truth.** May we all think deeply about these simple things.

Thank you for spending time with me today. The invitation to deliver a Buchanan lecture has been one of the greatest thrills of my career.