Envision 2030

Paths Forward

North Dakota University System

Table of Contents

Executive Summary

The State of North Dakota is facing profound forces of change. As any one of us knows, major change has confronted our state in the past, and vivid reminders abound. When we drive the highways of our state, we can see rows of trees, many planted in response to the changing rains and winds of the Dust Bowl. The trees, or wind breaks, helped hold the soil which in turn sustained crop production, and thus, helped our grandparents and their families stay here on the plains. The winds of change are blowing again, but this time they are radically different. The changes confronting our state are now tightly connected to North Dakota's higher education system, and the role it plays in work force education and training, research, and helping our businesses build a more diversified economy. As these challenges confront our state, higher education in the United States is also facing historic change.

To understand the nature of these complex challenges, the North Dakota State Board of Higher Education, the North Dakota University System staff, and members of the 11 campus leadership, faculty, and staff, have dedicated time and effort to 'envision' the future possibilities of 2030. Multiple leaders, staff, and faculty spent the past two years seeking insights, and where possible, consensus, by gathering data held in previous reports, new studies, and listening sessions throughout the state. Additionally, feedback was provided from the executive and legislative branches that helped ensure our efforts were aided by perspective from state elected leadership. The resultant report was briefed to the SBHE on two occasions in the late spring and early summer of 2018. This document seeks to share key insights and findings of this effort, to include several annexes that record the work of multiple advisory groups. Key conclusions of this effort have been integrated into the SBHE annual strategy, and will continue to be done on a periodic basis.

While the drivers of change are multiple, it was clear that by working as a unified system, our state can achieve a speed and scale of response that exceeds the efforts of any one campus working alone. But the future will be challenging, and there emerged three major drivers of change that appear to exert an especially strong influence now and into the future: changing demographics to include by age, ethnicity, and regional imbalances of growth; the emergence of a massive energy economy in the western parts of the state; and widespread digitization of our society, government, and economy to include digital networks, online education, automation, and artificial intelligence.

The SBHE recognizes it must support our faculty and staff to help meet the daily needs of students while responding to the vectors of change. Our priorities can be organized into three broad categories: improving the health and intellectual development of our students both on premise and through online programs; responding to technological driven workforce and research needs; and creating a more resilient financial model and system efficiencies that are more adaptive to the realities of a rural state with a limited technology-based business sector and limited capacity for philanthropy. While it is acknowledged that periodic reassessment and course-corrections will be required between now and 2030, the following key findings and related priorities are endorsed at this early stage.

Additionally, the SBHE recognizes its duty to be responsive to changing times and environments on behalf of all the people of North Dakota. To that end, the SBHE has been reviewing its own governance structure and how a unitary board, its committees and its membership can best utilize the perspectives of the institutions, workforce and students well into the future. That responsive outlook combined with a long-term strategy aims to create more opportunity for student success each and every day.

In the process of this first major 'envisioning' effort in a half generation, it became

apparent that the university system and its component campuses as well as the leadership of the

SBHE had been already adapting to a changing landscape. It was thus crucial to *Commend* and

Endorse key initiatives already underway and some of those already in the planning stage, as

well as to issue a *Call to Action* in other areas. *Supporting documentation for sections Commend,*

Endorse and Call to Action can be found in the Envision 2030 report as presented to the SBHE

at its May 2018 meeting, and approved after a brief period for Board comment. Report linked

here: https://ndus.edu/download/852/state-board-of-higher-education-reports/8100/envision-

2030-board-presentation-2.pdf

Commend

The system staff, campus leadership, faculty, staff, and students are commended for the adaptive

work already started since the beginning of the Envision 2030 study in May 2016. There are too

many efforts to cite here and are enumerated in briefing materials and the annexes, but several

stand out and are worthy of mention. A working group of presidents began a process of self-

governance improvement in 2016 which resulted in the establishment, for the first time in the

history of the SBHE, of a governance committee, and a renewed focus on two year/community

colleges to include a focused annual review and presidential evaluation. North Dakota was also a

national leader in establishing the General Education Requirement Transfer Agreement

(GERTA) and enjoys some of the highest levels of student transfer rates between tiers of

institutions, which is commended. Nursing and K12 teacher shortages have been acute, and the

NDUS system responded rapidly with the acclaimed Dakota Nursing Program and the Masters in

Teaching now available on multiple campuses across the state.

With the help of the state legislature, several campuses became regional leaders in using

advanced information technology to help students, to include reducing student textbook costs

through the use of open educational resources (OER) and using data analytic tools (e.g., STARFISH) to better assist and advise students. The State of ND also became a regional and in some cases a national leader in the integration of learning management systems, email, and other IT shared services which have saved money and increased system response. With regard to distance learning, there is much to commend. For example, one university is ranked in the top 20 online universities in 2017-18 in the nation, and two community colleges are ranked in the TOP 25 for graduation rates, and the community colleges are sharing courses in several collaborative efforts from oil field programs to information technology thru the Northern Information Technology Consortium (NITC). As a result of these and many more multi- campus collaborative efforts, the NDUS is achieving relative larger scale and accelerated speed of adaptation.

Endorse

As this Envision 2030 effort required almost two years to complete, the university system and campuses couldn't stand still. To the credit of leaders at all levels, the system of colleges began to plan and take action to respond to changing conditions. The SBHE therefore endorses several initiatives that are in planning already at the campus level, system office, or in partnership with the executive and legislative branches. A key innovation is focused on new challenges to student health, to include the Minot State University addiction studies and the Northern Lights Behavioral Health Center (University of North Dakota) and the Williston State College-Dakota College at Bottineau-Lake Region State College tele-health initiatives, and the Governor's Nursing Task Force.

Student learning is in flux, and the SBHE endorses efforts to expand online programing at UND, but recognizes the variety of approaches to include hybrid models, and that some

campuses must update and expand 'on premise' programs, especially those related to the trades and energy work force in the Bakken region. The SBHE endorses the Governor's effort in cybersecurity (Cyber K20) and commits its full cooperation to this effort, as well as commits to partner with legislators as they seek new ways to support the development of emerging technology and manufacturing research and workforce development. In addition, the SBHE endorses the continued value of the tenure model for faculty across the NDUS system, and critical importance of the liberal arts and social sciences programs across the NDUS system, as they serve as a key tool to maintain and improve communication skills, but also serve to create informed citizens capable of critical thinking in this rapidly digitizing society and globalizing economy.

Calls to Action

The SBHE committed to a 'call to action' on several new studies or initiatives, and instructs the NDUS staff and campuses to begin the planning and coalition building leading to implementation between now and 2030, subject to potentially changing conditions we may encounter. What became clear is that funding of higher education must be restored to pre-2017 levels, and it must be buffered in the long term from the fiscal instability of a commodity based economy. Just as legislators wisely buffered K12 from the wild swings of an ag-energy economy, it is even more urgent to do so for higher education, in part, because higher education must compete nationally and often globally for talent and research opportunities, whereas K12 is largely protected from such predatory forces. The SBHE recognizes the continued need of searching for more shared services opportunities that a unified system can provide. In response to the massive energy economy now building out in the western counties of the state, more

online programs and innovative work force programs must be made available, to include

distance agriculture, law, and energy; and innovative campus models to include the 'Dual

Mission' and 'Polytechnic' variants long absent from the NDUS system. The NDUS system

must do more with growing minority populations, such as the tribal colleges, and has extended

for the first time a place 'at the table' for all future SBHE meetings. The rapid and transformative

effects of digital networks, "Big Data", and artificial intelligence are recognized as profound

drivers of change and to that end the SBHE has proposed a joint study with the Governor and

Legislature on the implications of Artificial Intelligence (AI).

More urgently, as privacy of students, staff, and faculty come under pressure in this

digital age, the SBHE has established a digital privacy advisory group made up of students,

faculty, and respected jurists, business, faith and community leaders from across the state. As

the Governor has so aptly explained, the state of North Dakota faces a huge challenge of cyber

security work force and investment, and to that end the SBHE commits to seek yet higher levels

of integration with ITD to provide for cyber security of students, but also directs North Dakota

State University to assume state leadership of cyber research and to lead the efforts to obtain a

critical national certification from NSA, especially urgent as ND is one of only four states in the

nation without this key research university certification. Lastly, the SBHE believes it is urgent to

provide additional research funding for areas of emerging technology research and commits to

support legislative and executive branch initiatives in this area.

Introduction

The North Dakota University System has always faced challenges, but since the last major long-term "visioning" exercise a half-generation ago, the state has witnessed even more profound change than many others. We experienced a massive energy boom in western North Dakota; a digital revolution of AI and networks that will transform our rural society and high-tech ag and energy economy; and one of the fastest growing and changing populations in the country (N.D. Department of Commerce, 2015; U.S. Census Bureau, 2017). As a consequence, our faculty, staff and students are poised to face challenges of unprecedented complexity.

The Envision 2030 study has gathered input from many of those who are touched by higher education in the state of North Dakota on how to achieve those goals and many others. This report follows two years of discussions across 10 distinct Pillar Topics and their subsequent reports (NDUS, *Challenges and Goals of N.D. Higher Ed – Breakout Findings from Envision 2030,* 2016; *Envisioning higher education,* 2016; *Team Reports,* 2017) as well as lengthy discussions with legislators (Appendix E) and members of the public, and finally, two summits focused on the perspectives of students (Appendix C), and faculty and staff (Appendix D).

The narrative section provides a higher level synthesis of multiple voices now speaking up on behalf of higher education's future in North Dakota. Previous reports have documented the work of the ten Advisory Teams, and several of their findings and proposals are referenced again in this document. While the main purpose of this report is to communicate calls for action, other points are made to shore up support for work that has already been successfully implemented by the system's eleven institutions. Of the many facts found throughout the Envision listening sessions was an apparent communication disconnect from the system and its campuses to the public: Many from outside higher education's communities in the state called for certain processes, projects or programs to be implemented. Upon reflection with the campuses – faculty,

staff, students, administrators – and cross-referencing the hundreds of presidents' goals (NDUS,

Objective Summary of Institutional Goal, 2017), it was found that many of these proposals were

well underway. It would be inarticulate of this report to dismiss those concerns out-of-hand, as it

would be to overlook the numerous successes being regularly realized by the campuses. In

highlighting certain successes and leaving the rest to the campuses to express in more contextual,

real-time detail, the report aims to alleviate varied public concern so that all constituent and

stakeholder groups may come together to learn about and fight for the future of higher education,

together. Additionally, some challenges and solutions to them may be found by the task forces

created under the mandate of Senate Bill 2003 (S.B. 2003 Task Force Reports, 2018).

North Dakota University System
Headcount - 1960 to present
FTE Count - 1983 to present
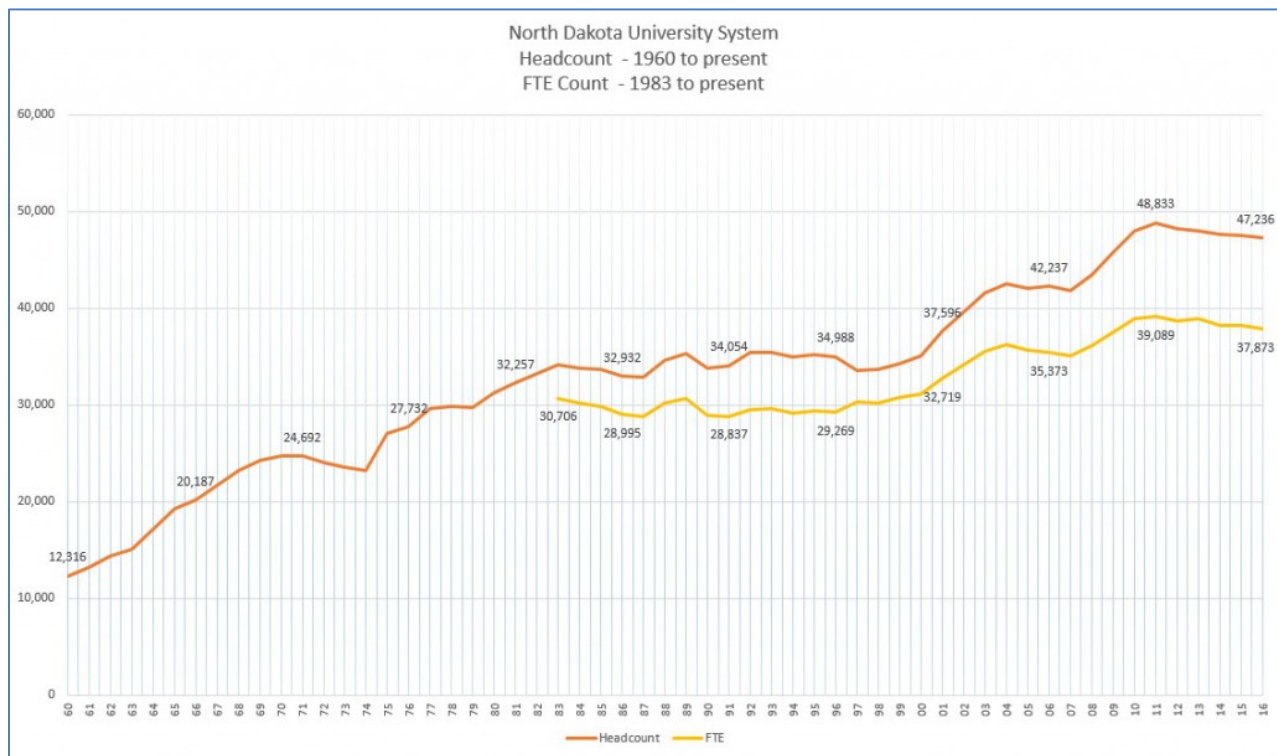
Source: NDUS Core Technology Services Institutional Research. Although enrollment across NDUS institutions most recently peaked in 2011, census data based on high school cohorts indicates an incoming increase in college enrollment projected out to 2025.

Despite a steady increase in demand for an educated workforce, economic disruptions

have led to strained budgets that threatened programs and diminished student services even as

the demand for them increased. All of this places further strain on faculty, staff and students, and distract them from their main duties: learning and adapting to changing knowledge. The impact of these disruptions is profound, yet our workforce and students drive forward both the goals and mission of higher education.

Despite the pressures of change and difficulties of budget reductions, it might be said that never before in North Dakota's long history have constituents and stakeholders rallied together so vigorously to promote higher education (Envision Team Reports, 2017; Appendices A-E). The conversations that have taken place among all constituent and stakeholder groups prove that all involved understand the return on investment that higher education provides for the state's needs. Students seek defined access to responsive programs. Parents need for their children to have access to the best education possible close to home. Faculty want engaged learners who strive to be engaged citizens. Communities value locally-minded individuals and families who bring life and activity to neighborhoods. Business and industry demand flexible, adaptable graduates. Lawmakers expect informed and active voters who strengthen districts. Simply put, the potential of each of those notions can be upheld through the promise of higher education – the metaphorical ranch (or farm) on which our state's future is grown. Now more than ever, while the faculty, staff and students innovate and change, the NDUS must be supported. The university system and our citizens need a "shelter belt" to defend against adverse actors and global trends that undermine community; a protection that allows North Dakota's higher education institutions to grow, prosper, and transform and make our state more competitive in a global market.

The NDUS must also strive to be a steward of state resources and tuition dollars. Heightened collaboration and an increased number of shared services among campuses has offered some success in the face of decreased revenues, but a much reduced, and in some cases

nearly decimated (reduced by 10 percent) workforce remains anxious in the face of further

proposed cuts. Without human capital to educate, innovate and research, the NDUS would be

unable to meet student and work force needs. Additional budget cuts to the university system

would negatively impact its ability to successfully perform its mission, regardless of innovation

or collaborative effort. As seen elsewhere, drastic funding cuts can have catastrophic

consequences (Marcus, 2017). Nevertheless, the spirit to continue creating opportunities for

student success has not been broken.

      Unsurprisingly, constituents and stakeholders found that adequate funding would be the

largest single priority to highlight in order to continue meeting the current and future needs of

our students. Properly resourcing NDUS was the highest priority voiced by a large swath of

stakeholders.

Context and Drivers of Change

As the early generations of North Dakota found, perseverance works, but if certain protections do not exist at the system level, one event can wipe so much away. The Dust Bowl era saw incredible erosion: of physical property, of talent and of growth. Those winds blew away the resources of the times, human and earth, never to return. The out-migration of the state's natural resources was partially slowed, and then halted for a time, when the idea of Shelter Belts were put in place.

Those lines of diversified trees and bushes that lined the landscape of North Dakota in order that the seeds of growth could take root saved the soil nearly a century ago. In doing so, they saved the farms, which saved the communities and all aspects of them: businesses, churches and schoolhouses. Those tree rows that protected North Dakota from damaging weather continue to serve as an inspiration for protecting what we have today.

In the same way that shelter belts were planted to protect resources from blowing away with the wind, modern shelter belts are also called for to protect today's resources from the risk of widespread out-migration and the related loss in competitive workforce or research capability. The protective factor in this Information Age – the 4th Industrial Revolution (Baweja, et al, 2016; Punit, 2018;) which prevents out-migration of talent and knowledge must come in the form of a responsive higher education system that meets student needs and is adequately funded, and protected from the sometimes radical swings evident to a commodity-based economy.

Fortunately, the SBHE, NDUS and the campuses have a long history of adaptation. From the founding of the University of North Dakota during N.D.'s territorial past in 1883, through the formation of Williston State College in 1957, the history of public higher education is irrevocably tied directly to the changes which have confronted the state, though the linkages have grown as have all economies and societies as they become increasingly knowledge-

information based. Since the frontier days, each of the state's public colleges and universities has found cause to change, to grow, and to adapt to newfound needs. Mayville State University (1889), North Dakota State University (1890), Valley City State University (1890), North Dakota State College of Science (1903), Dakota College at Bottineau (1906), Minot State University (1913), Dickinson State University (1918), Bismarck State College (1939), and Lake Region State College (1941) have all found homes in the communities they serve. More importantly, they have tirelessly educated hundreds of thousands of students, themselves moving on to shape North Dakota's future.

But the forces of change are gaining strength and will compel yet more adaptation by NDUS. From its conception, the Envision 2030 initiative has aimed to meet the needs of such change; to analyze emerging trends affecting education in general; and to learn from the constituent groups and stakeholders of public higher education in the state. During this two-year timeframe, dozens of listening sessions found consensus that encourages higher education to persevere through the reality and perception of incoming disruption. Some such disruptions include those surrounding the digitization of our economy, the western energy boom, and changing demographic realities (Association of Governing Boards of Universities and Colleges, 2017). Other disrupters include the promise and peril of a global online education capability (Ho, et al, 2015; Baweja, et al, 2016). Another, though not endorsed by the SBHE, was a call by some to downgrade the Liberal Arts & Humanities.

As higher education leaders and stakeholders meet student needs today, we also have studied long term drivers of change. Three seem to be increasingly influential in North Dakota: the digitization of our society, economy and knowledge; the massive, epic energy discoveries in Western North Dakota; and demographic changes in the numbers and nature of our population. North Dakota is one of the youngest and fastest-growing states in the nation (USCB, 2017).

State Board of Higher Education Vision: Innovate & Grow

'Continuous improvement of the candle did not lead to the invention of the light bulb.'

To meet the educational and workforce needs of North Dakota, the NDUS recognizes it must meet the needs of students and workforce on a daily basis, grow with expanding populations and economic activity, and transform in ways that may be completely unexpected. It is also recognized that continuous improvement on existing programs or areas of research will not necessarily lead to transformative change, just as continuous improvement of the candle could not lead to the light bulb. The SBHE sees a vision of daily work, growth and transformation in broad categories. And, data shows that the students of North Dakota value their education and are responsible stewards of the financial aspects of their education.

As proven by economic indicators of the past, North Dakota's students – and state – do better than average. That includes a higher-than-normal return-on-investment of public subsidy of six dollars back into the state for every one dollar provided to the institutions (NDUS, Strategic Plan, 2015), the ability to better leverage that subsidy through increased out-of-state tuitions (Thompson, 2018), and the fact that graduates of NDUS institutions typically have less student debt and default rates than their counterparts across the rest of the U.S.

Commit to improving the health and intellectual development of our students

There is an unprecedented epidemic in behavioral health and substance abuse; our students are not immune to such societal threats. Learning is changing, both cognitively in the students' mind and also in how knowledge is delivered; how students can learn and interact 'at a distance.' Distance educational technologies show great promise as they can bring key, strategic programs to the more remote parts of our state, such as agriculture, energy and law curriculums (see additional discussion under work force/research).

With regard to the intellectual development of the students, liberal arts continues to play a central role. It was instructive to learn that an increasing number of business and industry leaders value the types of generalists that higher education can produce, as more and more industries require employees who can navigate the program-specific needs they trained for, as well as those needs they haven't. Rapidly-expanding technological applications will remove jobs filled with "repetitive and predictable tasks" (Ford, 2016; Aoun, 2017; McKinsey Global Institute, 2018), and increasing technological reliance in every sector will require more techsavvy workers (Workforce Education Advisory Team, 2017). As positions are changed, removed and combined, fewer future employees will be able to go without both technical and cross-program educations. Additionally, the trend starting in 2010 and continuing through 2020 indicates that at least two-thirds of all jobs will require some form of post-secondary education into the foreseeable future (Carnevale, Smith & Strohl, 2013; Lumina Foundation, 2016). More sectors are favoring adaptable workforces (WEAC, 2017) that look quite like those with the generalized knowledge represented in the "Renaissance" men and women of our agricultural sector, discussed later in this section.

A major concern of the Board was the need to more fully engage all populations of the state, with special emphasis on tribal regions. These are among the fastest growing areas of our state, but student outcomes among tribal students are among the most challenged. The SBHE seeks to support increased diversity in all its forms, including expansion of inclusive efforts. The following action steps are recommended:

- Welcome a tribal president to attend all SBHE meetings as an honored guest.
- Endorse full funding of the Non-Beneficiary recipients of Tribal College programs (or appropriate remuneration of Tribal Colleges).
- Encourage local initiatives driven by Campus Diversity Councils (Appendix C).
- Encourage Diversity & Inclusivity training for staff, faculty and students (Appendix D).

- Encourage marketing efforts to focus on programs and sectors primed for more gender inclusion (Rexford, 2018).
- Encourages the University System to explore the possibility of In-STEM (like the successful In-MED program works for tribal health programs).
- Encourages more campus collaborative programs and EPSCOR funding/under-graduate research with Tribal Colleges.
- Encourages campuses to take steps to welcome men to non-traditional caring fields and women in STEM and computer science fields.
- Will work with presidents to explore ways to attract and retain highly talented individuals from underrepresented demographics to positions of leadership in the NDUS.

Transform workforce programs and research to diversify the ND economy

Higher education is not an ivory tower but is highly connected to the emerging information economy. Integral to the basic function of our agricultural economy, human capital and intellectual property play a central role, not just the land. North Dakota agricultural producers are modern day digital renaissance men and women, dependent on advanced agricultural education and research, and advanced digital machines that drive the physical machines. They have to deal daily with the diversity of challenges that appear on any farming or ranching operation – biological, horticultural, mechanical, electrical, carpentry, plumbing, business and economics – challenges that the NDUS helps these workers meet by offering relevant, timely, accessible, and affordable program offerings. The ag workforce are indeed the "Renaissance" men and women of today.

Ag producers must diversify to encourage long-term growth and sustainability, and the university system has responded to this changing need. However, new disruptions to workforce and research are appearing and threatening entire industries and sectors. The digital revolution and the energy discoveries in the West are posing profound challenges and opportunity for the state. The university system is central to the challenge of training our workforce in partnership with industry. Additionally, NDUS research institutions play a key role in diversifying our

economy through inventions, patents and intellectual property.

Specific fields aside, the demographic wave of new job openings is growing. Current job projections from labor, commerce, business and industry predict a massive influx of open positions by 2030 (Workforce Development Council, 2018; Job Service North Dakota, 2018). It remains unlikely that any of those newly-created open positions will be low-skilled, especially as technology is implemented to take care of the formerly-entry level tasks. Job Service of North Dakota data in Figure 1 indicates more than 80,000 projected openings by 2024, a number supported by the North Dakota Petroleum Council during recent jobs outlook meetings (WDC, 2018).

Total Unique SOC Codes		Comments	Projected Openings
11-2022	Sales Managers		11682
13-1021	Purch Agents & Buyers, Farm Prod		6176
17-2041	Chemical Engineers		2263
19-1012	Food Scientists and Technologists		1491
35-1012	First-Line Sup/Mgr of Fd Prep & Ser		18353
43-3031	Bookkeepng, Accountng, & Clerks	Target	17129
49-1011	First-Line Sup/Mgr of Mech, Install	Target	6797
51-1011	First-Line Sup/Mgr of Prod & Operate	Target	7184
53-1021	First-Line Sup/Mgr or Helpers, Labor	Direct/Indirect	12752

Source: JSND ND Employment Projections 2014-2024.

With a majority of those jobs likely to be focused toward the West, creating distance education opportunities for those adult learners and geographically-locked students who want to attend courses offered elsewhere in the system would be monumentally beneficial. Adjustments are needed for another reason: the historical accident of the placement of two major research universities along the eastern border of the state currently incentivize out migration from the western counties to the east.

		Attending	
		East	West
From	East	96.0%	4.0%
	West	38.5%	61.5%

Source: NDUS Fall 2017 enrollment report

Fortunately for the people of North Dakota, we have tool to help mitigate this 'east-west' challenge. Our state is already home to one of the top-ranked online universities in the nation, the University of North Dakota, ranked in the top 20 (see below for some examples of their programs). In addition, several other colleges are achieving great success in their online offerings. Thus an expansion of more online programs to isolated populations in the western part of the state is a most reasonable option, but what programs to prioritize was a concern for the SBHE.

Undergraduate Student Enrollment: Exclusively Online	AY16-17
Chemical Engineering	91
Civil Engineering	155
Electrical Engineering	126
Geological Engineering	1
Mechanical Engineering	280
Petroleum Engineering	111
TOTAL	**764**

Undergraduate Student Enrollment: Any Online Courses	AY16-17
Chemical Engineering	113
Civil Engineering	186
Electrical Engineering	151
Geological Engineering	21
Mechanical Engineering	382
Petroleum Engineering	168
TOTAL	**1,021**

The SBHE is committed to expand access in an effort to take its goal of *Providing Programs People Want, Where and When They Want Them*, and more programs provided to rural areas of the west is a logical additional step. As demographics shift, more students, not just in the west, will require distance options, including both adult learners and students who are geographically-locked away from available programs (WDC, 2018; JSND, 2018). The SBHE directed campuses to study or begin to expand efforts in the following areas:

- Enhance online program offerings to reach adult and geographically-locked students by extending current models such as NDSU's Ag program and UND's Engineering program.
- Create one-of-a-kind courses that expand upon current program success already in place at the campus and department levels. Programs that would benefit the most from expansion would include:

  - Agriculture;
  - Energy;
  - Legal Systems;
  - Health Care;
  - Manufacturing.

- By 2019 the campuses offering these programs will study required steps needed to provide this option and brief out before the SBHE Retreat. It is expected that campuses will provide this option by re-programming from existing resources.

As indicated through the WEAC study and the workforce-related Advisory Team reports (Agriculture, 2017; Energy, 2017; Law, 2017; Manufacturing, 2017; Technology, 2017), business and industry fully comprehend the importance of having the type of employees – well-rounded by degree programs including Liberal Arts & Humanities educations – that can stand up to disruptive change. Outside certain growth sectors (Teaching, Nursing, Cybersecurity), workforce will need candidates able to persevere, grow and transform to challenges created by an economy trending toward a high degree of automation (Baweja, et al, 2016; WEAC, 2017). Workforce training has a tendency to created "siloed" individuals, but those receiving program-

specific training geared and bolstered by skills imparted through Liberal Arts & Humanities studies will create more critically minded graduates able to withstand change. That doesn't necessitate all students take on four-year educations typically associated with Liberal Arts & Humanities backgrounds. Doing away with any forms of post-secondary education – certificates, credentials, associates, bachelors, masters or doctorates – would likely prove disastrous. Diversity of program offerings is essential toward creating both steady, adaptable workforces and stable, connected communities. Additionally, while distance education-only models may be favorable to some adult learners, the traditional, in-classroom model is still the preferred approach for most traditional and non-traditional full-time students (Ho, et al, 2015; CTS, 2017; Appendix C).

More specifically, NDUS will make it a priority to work with businesses to understand and respond to workforce-specific challenges in our state, particularly the much-studied nursing shortage, and the fields offering much promise under the Emerging Technology banner. While NDUS cannot directly address major health care industry challenges such as attrition rates, it will continue to commend, endorse and affirm our medical programs' abilities to graduate top-tier medical professionals across all fields.

For Emerging Technology, NDUS is much better suited toward endorsing further research and expanding its own program offerings throughout the system given all industries' increasing reliance on more technologically-savvy careers. NDUS will continue to commend, endorse and affirm our campuses in their respective pursuit of additional programming at the undergraduate and graduate level for all things related to Emerging Technology. NDUS will also work closely with the Emerging Technology Working Group, made up of legislators, business leaders, and a former governor, to explore mechanisms to provide additional funding for emerging technology research.

Efficiencies and innovation in NDUS financial enterprise

While the overall mission of North Dakota University System – creating opportunities for student success – is one that is consistently agreed upon by all constituent groups and stakeholders, providing the financial means of achieving this purpose has sometimes been a source of contention. Allowing the further diminishment of public resources for higher education during a time of transformation in the work force, economy, and technology, may well prove irreparably damaging to the system of colleges and ultimately to the state of North Dakota. Without a 'shelter belt' to protect this system of work force development and knowledge creation, the changing prairie winds of globalization will erode our resources and our future. Without workforce protection and a secure system, our faculty, staff and students will look to external systems of higher education to meet their need for stability, and a generational out-migration similar to that faced by N.D. in the 1980s will reemerge.

If the next generation is expected to shoulder the burden of tomorrow's innovation, service, and leadership, now is the time to equip them. It is the responsibility of NDUS to attempt all measures to do just that. If society requires an education system that creates graduates who can act locally and compete globally, it must equip its institutions with the capital – human and otherwise – to accomplish that goal. A diminished system of public higher education can serve few needs. The future of the state is tied to the future of higher education like never before. But funding of this critical public mission has been difficult under recent circumstances, and the general fiscal pressures on higher education are not just in North Dakota, but nationally.

Colleges and universities across the nation are experiencing changing funding and financial realities (Cielinski & Pham, 2017; Jones, 2018). In some cases, wealthy colleges and universities are attracting such excessive levels of private donations that the first tax on college endowments in the history of the U.S. has been created. In certain corridors of the nation,

venture capital and corporate sponsorships are flooding into campuses such that these empowered institutions are poaching the best professors and researchers from less well-funded Midwestern and Mountain state public universities, placing these institutions at risk (Harris, 2018; NDUS, 2018, WICHE, 2018). In other states, declining local economies and near-bankrupt state treasuries are resulting in a rapid public disinvestment of their treasured university systems.

North Dakota has a more complex situation. Per capita, it is one of the wealthiest states in the nation, but the recent economic downturn resulted in a radical disinvestment in higher education the past three years. Partly as a result of the cutbacks in education funding, our research universities have fallen victim to 'brain drain' to wealthy coastal universities. In other areas, North Dakota is leading the nation in outcomes-based funding; in lower tuition rates for families; shared programs and transferability of credits. But more must be done to adapt our financial model and create new system efficiencies.

The NDUS must also strive to be a steward of state resources and tuition dollars. Heightened collaboration and an increased number of shared services among campuses has offered some success in the face of decreased revenues, but a much reduced, and in some cases nearly decimated (reduced by 10 percent) workforce remains anxious in the face of further proposed cuts. Without human capital to educate, innovate and research, the NDUS would be unable to meet student and work force needs. Additional budget cuts to the university system would negatively impact its ability to successfully perform its mission, regardless of innovation or collaborative effort. As seen elsewhere, drastic funding cuts can have catastrophic consequences (Marcus, 2017). Nevertheless, the spirit to continue creating opportunities for student success has not been broken.

Unsurprisingly, constituents and stakeholders found that adequate funding would be the largest single priority to highlight in order to continue meeting the current and future needs of

our students. Properly resourcing NDUS was the highest priority voiced by a large swath of

stakeholders. The SBHE adopted the following strategies to continue providing opportunities for

success that our students have come to expect:

- Ensure each tuition dollar a student spends goes further through higher levels of systemwide collaboration and shared services;
- Encourage campus adaptability to regional markets by adopting greater levels of tuition flexibility and reciprocity changes;
- Create more opportunities for student success in anticipation of workforce diversification and research needs by obtaining legislative and external support for emerging technology in partnership with the Bank of North Dakota or Legacy Fund;
- Provide a solid foundation from which students may learn and faculty may educate by restoring higher education funding to 2015 levels;

While the aforementioned initiatives require action in the immediate term, the SBHE has

also committed to major change hoped for by 2030. That is, a means to stabilize our higher

education funding similar to that which aims to shelter K-12.

- Work with the legislature for the study of and eventual creation of a mechanism to buffer higher education from future commodity induced funding disruptions by 2030.

But the SBHE made it clear, that it is not just the search for secure financial resources that

guides our view of the future in 2030. We must reward, cultivate, and recruit quality faculty and

staff. To that end, SBHE renews a commitment to its people. Human capital is the driving

market force of any sector or industry. The tireless efforts of the faculty and staff throughout the

NDUS represent the best spirit of public service through the continued education of our youth.

Although the SBHE moved to give campuses flexibility of employment in times of financial

exigency, recent statements by members of the SBHE (SBHE Minutes, April 2018) reflect the

Board members' wishes to reaffirm that tenure remains an indispensable workforce protection

for faculty. The following action steps are recommended:

- Formal recognition and reaffirmation on the importance of tenure for professional faculty.

- Encourage Faculty and Staff Board Advisor positions to more engaged members of the SBHE, and to more frequently rely on their insight and advice.

List of Priorities

To position the North Dakota University System to flourish by 2030, the following

priorities of the State Board were proposed and approved in June 2018, though the Board

acknowledges that plans may need to adapt as conditions change over the next several years.

Commend Programs already Underway or in Implementation Phases

Commend the campus leadership, faculty, staff, and students for the adaptive work already

started since the beginning of the Envision 2030 study in May 2016. Key programs include:

- Dakota Nursing Program
- Elementary and Secondary Education
- Cybersecurity

Endorse

Endorse the following initiatives that are in planning already at the campus level, system office,

or in partnership with the executive and legislative branches:

Higher Education Finances and Efficiencies

- Adapting higher education finances.
- Strongly supports tuition flexibility based on individual campus market space.
- Supports the review of N.D. residency policies.
- Strongly supports eventual adoption of incentives for completion.
- Supports establishment and maintenance of minimum class size to enhance campus financial resilience (Senate Bill 2003).
- Strongly endorses additional shared services in the NDUS business enterprise (S.B. 2003).

Diversity for a Changing State and Changing Workforce

- Endorse more campus collaboration programs and EPSCOR funding/undergraduate research with tribal colleges.
- Endorse campuses to take steps to welcome men to nontraditional caring fields and women to STEM and computer science fields.

SBHE commitment to our Faculty & Staff

- Commits to taking care of faculty and staff, with respect to pay and benefits.
- Reaffirms the importance of tenure.

Call to Action

Commit to several key initiatives and instruct the NDUS staff and campuses to begin the

planning, coalition-building, leading to the implementation of the following new initiatives

between now and 2030, subject to potentially changing conditions we may encounter.

Adapting Higher Education Finances

- NDUS is directed to study options to establish a financial mechanism for purpose of buffering higher education funding, and report to the SBHE by mid-2019.
- Will work with the Governor and Legislature to explore pathways to restoration of student support and per-credit hour rates to 2015 levels.

Higher Education Efficiencies

- Explore financing innovations for campuses.

Access to Key Programs

- Western campuses, in response to anticipated surging workforce needs, will adopt the "Dual Mission" and "Polytechnic" models.
- By 2025, campuses offering major one-of-a-kind academic degree programs will study and then provide options for online programs (e.g., Agriculture, Energy, Law).
- By 2019 SBHE retreat, the campuses offering these programs will study required steps needed to provide this option.

Diversity for a Changing State and Changing Workforce

- Invite tribal presidents as honored guests at all meetings of the SBHE.
- Invites NDUS and individual campuses to work to improve relations with and support of tribal colleges.
- Work with presidents to explore ways to attract and retain highly talented individuals from underrepresented demographics to leadership positions within NDUS.

- Invites tribal college presidents to attend SBHE meetings as guests.
- Explore the possibility of In-STEM (like the successful IN-MED, RAIN, and INPSYDE programs works for tribal health programs).

Governance for 21st Century

- Continue to adapt and reform the SBHE, to include a study of subcommittee structures in the Board to better respond to tier-specific needs.
- Establish an advisory group for Digital Privacy.

SBHE commitment to our Faculty & Staff

- Engage Faculty and Staff throughout NDUS to improve collaboration and invite them in to help solve the issues facing higher education.
- Utilize best practices from business to recruit and retain top talent.

Appendix A: Additional Advisory Group Priorities

Detailed findings from each of the ten Advisory Teams can be found in their respective reports found at https://ndus.edu/. For the sake of brevity, the top priorities for the short term are listed below. Consensus determined that these were top-level priorities among the diverse constituent and stakeholder groups.

[Note: The Diversity and Technology Pillars were not included below, as their respective goals found overlap throughout all other Pillar reports. It can be stated that meeting these other Pillar goals would also help achieve success among these three Pillars.]

Agriculture

- Promote Ag-type programming resulting from collaborative state-to-state efforts that could help adult learners in agriculture seeking certificates to correspond with the rise of hobby/boutique farming.
- Expand research efforts that aim to meet growing productivity demands from more diverse locations and under more diverse conditions calls for research involving genetics, genomics, plant and soil science as the primary building blocks on which other issues are considered.

Diversity

- Recommendations articulated in the narrative.

Energy

- Expansion of online-oriented programming to cater to geographically-locked traditional students and adult learners seeking to advance energy careers.

Health Care

- The SBHE defers to the recent Department of Labor study on nursing. (Governor's Nursing Shortage Taskforce, 2018).
- Supports the initial successes and ongoing efforts of behavioral and mental health needs, such as the First Lady's efforts to fight addiction.

- Encourages further efforts to promote the growing needs of psychology, counseling, and other overlooked fields.

Legal Systems

- The SBHE welcomes and endorses the recent work of the ND Legal Industry Advisory Group and its observations and considerations for the President, UND.

Liberal Arts & Humanities

- With regard to the role of Liberal Arts, it was instructive to learn that an increasing number of business and industry leaders value the types of generalists that higher education can produce, as more and more industries require employees who can navigate the program-specific needs they trained for, as well as those needs they haven't. Rapidly-expanding technological applications will remove jobs filled with "repetitive and predictable tasks" (Ford, 2016; Aoun, 2017; McKinsey, 2018)
- Global Institute, 2018), and increasing technological reliance in every sector will require more tech-savvy workers (Workforce Education Advisory Team, 2017). As positions are changed, removed and combined, fewer future employees will be able to go without both technical and cross-program educations. Additionally, the trend starting in 2010 and continuing through 2020 indicates that at least two-thirds of all jobs will require some form of post-secondary education from here on out (Carnevale, Smith & Strohl, 2013; Lumina Foundation, 2016). More sectors are favoring adaptable workforces (WEAC, 2017) that look quite like those with the generalized knowledge represented in the renaissance men and women of our agricultural sector.

Manufacturing

- Encourages the two-year colleges to establish a manufacturing pathway from high school to Bachelor of Applied Science in Manufacturing to be offered on campus and online. This is to be funded from existing resources and the private sector.
- Encourages the research universities to expand masters and doctoral level programs to support 'high end' manufacturing programs from existing resources and in partnership with the private sector.
- Fosters establishment of a Manufacturing Consortium and a Center for Manufacturing Research and Workforce in the Red River Valley by 2030.
- Supports fully-funded tuition and state-based research grants and faculty support for Manufacturing and will work with the Executive Branch, Legislature, and BND to make such resources available.

Technology

- See Technology, Research and Work Force appendix.

Tomorrow's Student

- Engages with DPI on current K-12 student learning models, to implement best practices by the time their cohorts reach post-secondary enrollment.
- Continues efforts of collaboration with DPI and ITD to create highly-detailed, fully functional public resources for everyone from administrators to faculty and counselors to better facilitate transition to post-secondary schooling.

The Whole Student

- Encourages continuation of efforts regarding tele-health and tele-mental health initiatives.
- Supports campus student services ensuring intervention strategies are in place for the most at-risk students.

Appendix B: Technology, Research & Workforce

The SBHE is particularly focused on how to support emerging technologies as an area of

research prioritization and work force related programs for expansion, and believes focusing

more human and financial resources on emerging technology will help promote economic

diversification during the current wave of digitization now affecting our economy. Priorities

follow:

- Commends UND for their establishment of Research Institute for Autonomous Systems (RIAS) and directs UND to continue to lead collaborative efforts across NDUS and the State of ND; recognizes the potential opportunities in the field of robotics, digital sciences and welcomes efforts made by some campuses to re-program resources, both financially and with faculty/staff positions, to accelerate program offerings and research where they show student and researcher interest; will work to obtain additional funding for these related emerging fields, with the Legislature, Executive Branch and Bank of North Dakota.
- Strongly encourages NDSU and UND to establish a joint program in Data Science by 2020, that could provide certificates or a 'minor' to several related fields in the sciences, engineering, or social sciences and liberal arts. These should be provided from existing resources and in partnership with industry and business.
- Commits to work with the Executive Branch, Legislature, and BND to provide full scholarships and research support for students and faculty in Data Science and related fields.
- Development of PK-12 Computer Science and Cyber Standards for use in every ND PK-12 school; development of appropriate curriculum with stakeholders and partners; development of flexible and varied PK-12 teacher licensing options to ensure there are teachers across the state trained to develop and teach the curriculum; development of clear pathways for students to progress into both certificate and degree programs at NDUS institutions
- Reaffirms support for the collaborative, system-wide initiative in Cyber Security Education and that NDSU (UND as junior partner), MiSU, and BSC lead the system response. It is desired that by 2021 all NDUS freshmen will take a live or online course providing cybersecurity literacy.
- Designates NDSU as the lead university for Cyber Research to coordinate efforts in this field across the state; strongly encourages NDSU and BSC to achieve National Security Agency designation as Centers for Academic Excellence (in Cybersecurity) by 2025.
- Strongly supports NDSU and BSC efforts to field 'cyber ranges' by 2021, and commits to work with the Legislature and Executive Branch to obtain incentive funding for such endeavors, but that campuses should pursue goals listed above by re-programming from existing resources.

- Directs CTS to work with ITD to enhance protections of the NDUS system, and to seek legislative changes as necessary to effect such change both in funding and authorities.
- Governance Committee and NDUS/CTS will work to make cyber security a 'shared service' by 2021, with CTS-ITD assuming direct control of cyber security on all campuses.
- Develop and enhance high performance computing resources that leverage higher education and cloud-based systems.
- Increase NDUS capacity to provide expert resources in advanced informatics, data analytics, and scientific computing
- Continually improve high performance research networks that meet the research needs of NDUS and state government and desires to implement a single governance structure to support these efforts.

Appendix C: Student Feedback
Acknowledgement
Thanks to all the students who gave feedback throughout this process. Special thanks to the North Dakota Student Association for hosting the student summit, and providing names of those involved.

Alex Abrahamson	Molly Hane	Wayne Oberg
Paige Amann	Kathryn Herring	Casey Orvedal
Bradley Banken	Sovi Herring	Aaron Oslowski
Sarah Baron	Addison Helgaas	Garret Pemelton
Marquisa Bashir	Heather Heyerman	Abagail Pogatshnik
Maddie Bennett	Justine Irakiza	Shawn Postovit
Jarin Blumhagen	Giselle Ishimwe	Daniel Pretzer
Marshal Bolte	Maxwell Jenks	Miranda Petrich
Trista Crimmins	Mckaeli Johnson	Mason Rademacher
Grace Cutshaw	Michael Kelsch	Kaelan Reedy
Melanie Dougan	Alexis Kohler	Jordan Schade
Kaleb Dschaak	Brayden Lampe	Ashley Scherbing
Caleb Eilts	Gracie Lian	Chase Schuh
Niklas Ernst	Lindsey Lillehaugen	Ben Schuler
Christopher Flores	Katie Lundseth	Jonathan Tangen
Bailey Gerbracht	Megan Maassal	Ashley Thornton
Kyle Gilkinson	Johannes Mahlum	Mason Wentzel
Madison Nelson-Gira	Logan Meyer	Lindsay Winkelman
Robert Gleeson	Michael Moen	Grace Zeller

NDSA Student Affairs Committee - A Resolution in Support of the Envision 2030 Initiative

WHEREAS, planning for the future of higher education is of the upmost importance in a university system; and,

WHEREAS, students are constantly changing demographically, geographically, and economically, etc., and so it is the duty of the university system to evolve to fit their needs; and,

WHEREAS, Envision 2030 is a plan that the North Dakota University System is developing in order to meet the aforementioned needs of future students; and,

WHEREAS, the North Dakota Student Association met with members of the NDUS to discuss and give input on Envision 2030; and,

WHEREAS, students, faculty, administrators, etc., have collaborated and given insight in order to plan for the future of higher education; so, therefore, let it be

RESOLVED, that the North Dakota Student Association supports the Envision 2030 initiative; and, let be it

FURTHER RESOLVED, that the North Dakota Student Association encourages further

collaboration between students and the University System in the development of Envision 2030.

Approved through the NDSA Student Affairs Committee on Friday, April 13, 2018.
Among major topics noted during the two separate discussions during the NDSA's Student Summit at North Dakota State College of Science this February were accessibility and affordability.

Accessibility

Students noted what they felt were numerous problems with the current digital strategies, including:
- Whether online course offerings were cost effective.
- If course offerings could be more comprehensive.
  - Whether more lower level (100 and 200-level) courses could be offered with distance options.
  - Whether certain majors are better-suited to online. "*People seem better-suited to general education classes offered online, but not major-specific classes offered that way.*"
- Integrity of learning in an online environment: "*In a classroom, there's always a professor and other students to hold you accountable. With online, it's easy to cut corners.*"
- Whether or not online courses were offered at the same price across different institutions, or if they even could be.
- If any advising was being offered online. Some students noted that depended on the adviser.
- Fixing perceived latency issues across content management systems (CMS).
- Offering separate CMS instances.

Conversation did commence regarding economies of scale for both course offerings and CMS – that most students understood offering a systemwide CMS could result in savings, although at times might not be the best fit for different campus needs. Additionally, students discussed how notable differences existed between online-only institutions such as University of Phoenix and more traditional campuses that focused first on classroom instruction, with secondary attention to online offerings. Disagreement did commence on likelihood of student engagement in-class versus online, with some students noting that peers were just as likely to engage with others in either setting, while other students responded that it was situational and based on student personality/comfort.
When asked how many preferred in-class courses and how many preferred online, a majority of students responded more positively to in-class offerings. That aligns with the previously reported trend of a growing student body who is increasingly comfortable with online, but still overwhelmingly (90 percent) preferring in-class.

Affordability

Students spent considerable time discussing opportunities for increased affordability, including:
- How to increase OER usage as a priority throughout NDUS.

- o   Roughly half students already had positive experiences with OER in a course.
- If expanding dual credit courses would offer a better transition from K-12 to post-secondary, and if that would create a more efficient overall pathway toward completion/graduation.
    - o   How to increase connections between institutions and high schools in their respective regions.
- Whether further possibilities for private/public partnerships existed that could allow students to better utilize their pathway to completion/graduation as a more enhanced pipeline to employment.
- Discussion followed on students being able to choose whether they wanted to be "trained" or "educated," and which path offered a way toward becoming a leader.
- Half of all students surveyed at the student summit noted that return-on-investment was a major consideration when choosing a major. While that may be of a market-based solution beyond the scope of what higher education can address directly, it may be a long-term challenge ripe for workforce/higher education collaboration/study.

Other feedback external to Accessibility or Affordability:

- Students openly worried about what would happen if further funding cuts were made, specifically how that would impact their particular programs, and even accreditation.
- Students who complete/graduate on-time or early are typically self-starters or not first generation students. What are ways to foster opportunities among students who are first-generation, low-income, or returning?
- Is it possible to increase the readiness of high school counselors, who students said were a number one resource for them while they were still deciding where and when to attend college? What possible tools or additional training could be provided for high school counselors?
- Students noted that campus or system-level communications teams could do well to find more appropriate vehicles to communicate with to find a student audience. Students noted that apps like Snapchat and Instagram could work well for organizations that could deliver more visual-based messages. Students acknowledge formal communications, but also want "fun" and "personal" communications when possible.
- Students in both discussions noted that not every campus had a diversity council, which could be problematic for students at the campuses that didn't.
- Students noted that private/public partnerships could be beneficial for colleges and universities, but did little to protect Liberal Arts & Humanities, and asked how to protect those programs.
- Other discussion touched on student-driven learning and flipped classrooms, although students understood that could likely be best addressed at department levels.

Appendix D: Faculty/Staff Feedback
Acknowledgement

Thanks to the faculty and staff members for providing in-depth, detailed analyses that can help ensure the consensus-building effort of the Envision 2030 process may help our system of higher education to grow, adapt and transform. Special thanks to the Council of College Faculty and N.D. State Staff Senate for co-organizing their groups' summit.

Gary Albrightson	Carla Gross	William Nganje
Dr. Karen Arlien	Holly Grulhke	Kathleen Obritsch
Joan Aus	Cara Halgren	Marty Parsons
Diane Axness	Lloyd Halvorson	Katie Peterson
Sreekala Bajwa	Dana Harsell	Birgit Pruess
Carolyn Baker	Jeffrey Hart	Michael Redding
Amanda Benedict-Barbian	Todd Hauf	Mike Riesinger
Tayo Basquiat	Ken Haught	Jean Rolandelli
Sandi L. Bates	Ryan Hanson	Dawn Rumple
Arly Berg	Jacalyn Hendrickson	Cathleen Ruch
Andrew Bertsch	Travis Hoffman	Sayeed Sajal
Alison Graham-Bertolini	Cathy Jacobson	Nicklos See
Laurice Betting	Nicole Juve	Jane Schuh
Corinne Brevik	Connie Klein	Jack Schulz
David Buchanan	Sagar Kondru	Jennifer Sherman
Lisa Burger	Cole Krueger	Dr. Ellie Shockley
Dusty Cayssials	Pamela Krueger	Charlie Stoltenow
Karen Clementich	Elizabeth Legerski	Ed Streifel
Tawnia Cummings	Dan Leingang	Tammy Such
Shubham Datta	Michael Linnell	Kendall Swanson
Danny Devlin	Paul Loree	Lydia Tackett
Tim Daniel	Aubrey Madler	Kim Thiel
Dr. Debora Dragseth	Annette Martel	Barbara Thorsen
Lisa Earls	Kari Mattheis	Sarah Vollmer
Gail Ebeltoft	Retha Mattern	Andy Wakeford
Karleen Estenson	John McEvoy	Anthony Willer
Carla Freschette	Angie Milakovic	Shirley Wilson
Laura Fettig	Derek Vander Molen	Teri Wright
Joanne Fields	Melissa Moser	Misti Wuori
Jeannine Funk	Doug Munski	Bruce Wykowski
Lynette Gaetz	Dr. Eric Murphy	Craig Zimprich
Tifanie Gelisnke	Trent Myran	
Cheryl Grew-Gillen	Kim Nelson	

Faculty and staff touched on nearly all 10 Pillar topics through the two-year process, although a majority of feedback came during the Faculty/Staff Summit last spring. Additionally, faculty and staff provided feedback through listening sessions, and via campus councils back to system office staff on varied topics. Among major subjects noted during the joint Council of College Faculty/N.D. State Staff Senate Summit at the Bismarck State Capitol this April were financial

challenges, potential program changes, and workforce protections.

Financial challenges

- What is going to be done to keep tuition cost efficient?
- If students know how badly the cuts hurt – as faculty and staff know – how do we get the legislature and SBHE to see how much harm has been done to our campuses and the futures of our students?
- How can we keep the legislature from raiding or stopping the use of a stabilization fund in lean times? There are millions in the Legacy Fund that aren't in use.
- Campuses have adjusted to the cuts, but quality is already suffering. It may not show yet, but more cuts, and the pain will really begin to show. We can't fall any further in quality.
- If there are going to be 80,000 new jobs pouring into the west in the next 9 years, why won't we get the money sooner so we can be prepared for all the people?
- Housing is important for staff, but how will students afford housing as rental prices increase again with the energy increase (in prices).
- What responsibility do universities have for addressing student loan debt? Can universities remain profitable, without sending students into debt? Can ND do anything on a state level to alleviate (student) debt?

Program changes

- Is it possible – or is it necessary – to rebrand Liberal Arts & Humanities in order to magnify their importance to the public? May we redefine them, and reaffirm their necessity to both higher education and society-at-large? "*For me, the humanities are much more than skill sets. They are more than just aptitudes. They are attitudes and awareness's.*"
- Has the governor realized that online education cannot fully replace face to face education? Must we continue to assume that graduate programs are primarily offered in the Red River Valley in this system?
- What can we do to share programs throughout the system to help those students who want to stay local, but attend certain classes offered outside their respective region?
- Online courses and programs do not benefit students in the long run. It may sound appealing; however, students do not retain information from online courses like they do from face-to-face classes.
- Are there ways to create better standardization throughout common course numberings? Is a Common Course catalog possible now, or in the future?
- Look more into the possibility of stacked credentials.
- Academic advising – the bridge between Academic and Student Affairs – serves as a roadmap for students' path to completion/graduation. Where possible, training would aid faculty and staff advisors on this topic.

Workforce protection

- What positive impact can the SBHE have on the state to improve faculty and staff wages and benefits in the next biennium?
- Implement regular Campus Climate surveys to help inform strategy and gauge perspectives of campus groups.
- What steps will be taken to ensure that further reductions beyond the initial decimation to the NDUS workforce does not happen?
- Will the SBHE take steps to protect tenure?
- Are you in favor of granting the three percent salary increase to the NDUS presidents while the faculty and staff do not get any type of increase?
- Health care/insurance: Will faculty and staff be asked to pay for half?
- During times of budget constraints, how can campuses manage the options of cutting programs versus having an increasingly overworked and underpaid workforce?

Additional, non-categorized feedback:

- What plans for software cyber training for NDUS?
- There is a great deal of concern, frustration, etc. over the implementation of BlackBoard. It is not a good product. It is not an improvement over what we have?
- Is it true that students will be able to complete admission applications through the ND E-Transcript "PowerSchool" systems versus the NDUS Application?
- How do you see DSU adding programs to serve the oil industry? It is hard to live on our current salaries when oil prices keep going up. In order to keep people here, will raises be substantial?
- What are your thoughts on the governor's ideas using the Arizona State University model?
- NDUS strategy to get the governor on campuses before legislative session to see what each does – what students want – what campus' have given up – what we need.
- Guarantee existence of VCSU in state constitution.
- Keep a variety of course choices – do not make a strong move towards online-only.
- Greater support for smaller colleges. Prioritize the right aspects for each school.
- DPI cutting program requirements, some educators expressed concern that they had to take classes that would not be featured on their licenses. "*My Title I classes will not show that I have a Title I endorsement – any teacher with an Elementary Education degree can teach four.*"
- What are we doing about campus safety across the state in regard to school shootings and bomb threats?
- No education major classes should be online because as a future educator that is not how we will teach, the opportunity to work with peers gives different views.
- If budget cuts continue will we be seeing the quality of education that we are currently receiving?
- STEM Endorsement – fully online.
- It's hard to grasp the content and put our skills to use when you're not given a chance to show them face-to-face.

- More hands-on Education.
- Reciprocity with all graduate programs in the region
- Helping universities cope when budget cuts lead to stripping
- Paying distance ed fees for online courses taken at your university when you're on campus.
- What decides the required classes such as HPER 100? It's pointless for some people.
- Pointless classes required in generals.
- How is the NDUS planning for climate change?
- Is the NDUS divesting from investments that are related to fossil fuel industry?
- How are endorsements managed? Ethically?
- What is going to be done to keep colleges open?

Appendix E: Legislative Feedback
Acknowledgement
[Note: Section will include expanded information from S.B.2003 task forces and compiled notes
from legislator feedback throughout two-year process. This was done either through legislator
involvement in the formal meetings, informal discussions and brown-bag sessions.]

Rep. Jake Blum	Rep. Emily O'Brien	Sen. Carolyn Nelson
Rep. Glenn Bosch	Rep. Brandy Pyle	Sen. Dave Oehlke
Sen. David Hogue	Rep. Mark Sanford	Sen. Merrill Piepkorn
Rep. Dennis Johnson	Rep. Cynthia Schrieber-	Sen. Jim Roers
Rep. George Keiser	Beck	Sen. David Rust
Rep. Lawrence R. Klemin	Rep. Robin Wiese	Sen. Jessica Unruh
Rep. Kim Koppelman	Sen. Brad Bekkedahl	Sen. Rich Wardner
Rep. Lisa Meier	Sen. Ray Holmberg	
Rep. David Monson	Sen. Judy Lee	

Agriculture

Conversations on Agriculture had a tendency to revolve around the following topics:
- Stabilizing rural communities;
- Leadership programs/mentorships; and
- Precision Agriculture.

Some legislators were familiar with programs revolving around Precision Agriculture already underway throughout NDUS, such as those at LRSC and NDSU, with those colleges not only serving as "economic drivers," but also as "community drivers." - "*These types of programs offer adult opportunity.*" With farms becoming larger in general due to more technology being active in machinery and general processing, how could communities be sustained that had once relied on dozens of operations?

Other considerations were how a state with such a large agricultural output could keep up as fewer farms were considered full-time operations: Just 0.6% of the state's population was considered active ag producers, with another 1.2% considered dabbling. In other terms, the latter statistic referred to the number of households whose income came from something other than agriculture, but who still maintained a small ag operation (hobby, boutique or specialty farming), while the former referred to those households which maintained all or most of their income from agricultural production.

Certain concerns were elevated for the ag sector, namely on if it would follow manufacturing's decline. According to the state Ag Department, N.D. had dropped rankings from fifth to eighth in ag exports. To elevate that position would take trade and foreign policy expertise. With fewer rural kids choosing agriculture, it would be vital to increase interest among urban youth, or increasing student exchange/language opportunities with nations that served as major trading partners.

Additionally, offering courses or programs that helped research and capitalize on emerging

agricultural opportunities, as well as sustainable practices, would likely be a strong path forward. Nearly all those present for information or formal talks noted the positive opportunity that online ag education would provide for those adults who were dabbling in agriculture through second-income operations (hobby, boutique or specialty farming).

Diversity

Feedback included ensuring that NDUS institutions recruitment practices were inclusive toward diverse demographic groups, as well as making sure that in addition to the traditional in-class courses, campuses were offering progressive options for diverse course delivery with more hybrid and distance models.

Energy

Three topics stood out from Energy-related discussions. They were:
- Online program offerings;
- Adult learners; and
- All-of-the-above research and curriculum.

Participants in the Energy-focused discussions noted that there was considerable overlap between the two topics above – that in order to advance within careers or attain new jobs, many adult learners would have to learn while working. In other words, that meant more distance program offerings from the energy-related fields of study. Additionally, online offerings from the eastern colleges and universities could aid traditional, yet geographically-locked students. On the third topic, while considerable conversation focused on education regarding current oil & gas, and coal-fired power plant careers, other education focused toward renewable energy such as wind turbine tech was seen as positive due to job prospects for graduates.

Health Care

Legislators noted the nursing shortage would likely only grow as a problem the market was facing. Participants noted that recruitment could be aided by ramping up efforts within communities with health care centers/facilities, that would be further boosted by an increase in distance education offered to geographically-locked or returning adult students. Longer-term solutions would be to foster an environment where health care systems could be smaller, and more focused on preventative health. Also noted was feedback from multiple legislators who sought expanded behavioral health services.

Legal Systems

Legislators noted that increased law offerings for geographically-locked and adult students could help alleviate legal position shortages in western N.D. Other feedback revolved around other practice-specific shortages, such as those in Energy Law, and more.

Liberal Arts & Humanities

Educating well-rounded citizens and strengthening language programs were the number one and two considerations given during formal or informal legislative feedback. Legislators noted the necessity for graduates who were able to adjust with workforce needs, and who were engaged with their communities. Offering increased study abroad opportunities was also noted with consideration to the language programs, brought up as a way for students to expand their cultural horizons while also strengthening their career – and N.D.'s trade – prospects.

Manufacturing

On Manufacturing, lawmakers spoke about economic opportunity for the industry within the state, not just in traditional manufacturing jobs, but in positions new current and future manufacturers would have need of: accountants, finance specialists, app developers, etc. Higher degrees of automation now fully intertwined with manufacturing meant that while the industry still needed physical space (real estate) in which to produce, it needed fewer people. That combination created opportunity for the state.

Technology

The best attended informal discussion by-far was that on Technology, which brought a roomful of legislators and tech industry representatives to NDUS offices. Among the greatest path of discussion was reps from business and industry noting how Tech didn't necessarily just refer to "Information Technology," but instead to advances in Technology across every industry, business and organization in both the public and private sector. Discussions have ranged from preparing students through their chosen academic programs for the advances in technology affecting their respective industries, as well as keeping abreast of newer technological methods and applications for delivering education – onsite and off-site (distance ed). Additionally, discussion touched on public-private partnerships concerning research into Emerging Technology fields viable in N.D. such as data analytics and unmanned aerial systems, as well as those fields that are considered "high growth" careers throughout the U.S. such as cybersecurity.

Other discussion touched on manufacturing's growing reliance on technology, which created a larger need for digital security to keep plants online and functioning; content management systems were constantly recording and archiving information, which leads to more challenges regarding personal privacy; increased connectivity also meant increased storage and access challenges, which related directly to server space and the physical plants to hold the servers (of which N.D. has much) – and that higher education could involve itself in storage and transmission of certain data; machine learning was on the rise, which could lead to yet more opportunity in the state.

Tomorrow's Student

Much of the conversation revolved around how fast students' needs were changing; if "horizontal" versus "vertical" approaches being reviewed to study the difference between interdisciplinary experience and specialization; if personalized learning experiences could successfully be transplanted (or paralleled) to those in secondary schools; what CMS tools would be available today versus the future; perceptions and challenges regarding tuition and fees; and how to stay competitive to students who are in an always-connected digital atmosphere.

The Whole Student

No legislative comments attributed.

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NDUS System Office Staff
NDUS Public Affairs
Council

Advisory Teams
Agriculture
Diversity
Energy
Health Care
Law
Liberal Arts & Humanities
Manufacturing
Technology
Tomorrow's Student
The Whole Student

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Timeline

January 2016: Envision 2030 Summit planning preparation begins.
May: Envision 2030 Summit at N.D. State Capitol.
June: State Board of Higher Education (SBHE) discusses Envision results, next steps.
July: Recommendations discussed, refined by Chancellor's Cabinet, determine areas of further study.
Sept.-Nov.: Pillar discussions held throughout system to refine respective directions.
- Thursday, Sept. 15. 10 a.m.-noon. *Dickinson State University*. **Diversity**.
- Wednesday, Sept. 21. 6-8 p.m. *Williston State College*. **Energy**.
- Thursday, Oct. 6. 1-3 p.m. *Valley City State University*. **Liberal Arts & Humanities**.
- Tuesday, Oct. 11. 8-10 a.m. *University of North Dakota*. **Tomorrow's Student.**
- Thursday, Oct. 13. 1-3 p.m. *North Dakota State University*. **Agriculture**.
- Wednesday, Oct. 19. 1-3 p.m. *Bismarck State College*. **Technology.**
- Tuesday, Oct. 18. 1-3 p.m. *Lake Region State College.* **Health Care.**
- Thursday, Oct. 20. 1-3 p.m. *North Dakota State College of Science*. **Manufacturing**.
- Wednesday, Oct. 26. 1-3 p.m. *Minot State University*. **The Whole Student**.
- Wednesday, Nov. 30 1-3 p.m. *N.D. State Capitol, NDUS Conference Room:* **Law.**

Sept.: SBHE reviews and approves report or determines further study needed on recommendations, takes action on items requiring immediate approval.
Oct.: Report highlights incorporated into SBHE's annual report, prepared for printing and distribution in November.
Nov.: Additional direct outreach to Faculty, Staff, Students.
Dec.: Envision 2030 "Synthesis" document drafted; Individuals identified for Advisory Teams.

Jan/Feb. 2017: Advisory Teams created.
Feb: Brown-bag lunches held. Legislative recommendations recorded (Appendix C).
May: Enhance public messaging on Envision effort.
April-May: Advisory Teams conduct respective Pillar study.
June: Advisory Team recommendation reports to system office.
June: Continue legislative outreach.
June: Envision briefed at SBHE retreat.
Dec.: Cabinet meeting for feedback, presidents' goals

Jan. 2018: Support/aid facilitation of Student & Faculty/Staff summits.
Feb.: Student Envision summit, recommendations recorded (Appendix A).
April: Faculty Envision summit, recommendations recorded (Appendix B).
April-May: Compile Envision 2030 "Paths Forward" report.
May, June: Envision 2030 presentation to Board**.**

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