BISMARCK STATE COLLEGE

Bismarck State College
Building workforce to drive the economy

SENATE APPROPRIATIONS COMMITTEE
JANUARY 19, 2021
Dr. Doug Jensen, President

Current biennium accomplishments (2019-21)

- Launched BSC as North Dakota's Polytechnic Institution
- Drove additional workforce in High Priority Occupations
  - Instrumentation & Control
  - Cybersecurity
  - CDL program established
  - Phlebotomy program
  - Emergency CNA program for NDDoH
- BSC Health Sciences – $8.9M
  - Increased program capacity enrolling more students – need stat on up/down students)
  - Added new programs
    - Sonography
  - Expanded hands-on learning in simulated hospital environment
  - Enhanced P3s

Current challenges

- Ability to move at the speed of industry and advancements in technology
  - Internet of Things (IoT) – changing all occupations (Industry 4.0)
  - Build the workforce to meet needs for expanding ND economy
- Increasing and expanding pathways with K12
  - Mobile apps
  - Cybersecurity
- Current funding formula
  - Insufficient funding for career and technical programs
  - New polytechnic program start-up costs (state funding delayed for 4 years)
- Capital facility and equipment needs
  - Align with industry sector demands

2019-21 Base Budget compared to 2021-23 Needs-Based Budget (all funds and FTE)

	2019-21 Base Level	Requested Adjustments	2021-23SBHE Needs-Based Budget	Executive Recommendation	Difference from 2019-21 Base Level	Difference from SBHE Needs-Based Budget
Campus Operations	$ 98,743,682	$ (1,280,982)	$ 97,462,700	$ 94,833,161	$ (3,910,521)	$ (2,629,539)
Capital Assets	$ 1,922,561	$ -	$ 1,922,561	$ 1,922,561	$ -	$ -
Plant Improvement Carryover						
Capital Projects - Non-State Funded						
Capital Projects - Non-State Carryover						
Operating Carryover						
Total Appropriation	$ 100,666,243	$ (1,280,982)	$ 99,385,261	$ 96,755,722	$ (3,910,521)	$ (2,629,539)
General Fund	$ 31,068,227	$ (2,405,428)	$ 28,662,799	$ 26,358,629	$ (4,709,598)	$ (2,304,170)
Special Funds	$ 69,598,016	$ 1,124,446	$ 70,722,462	$ 70,397,093	$ 799,077	$ (325,369)
Total Funding Sources	$ 100,666,243	$ (1,280,982)	$ 99,385,261	$ 96,755,722	$ (3,910,521)	$ (2,629,539)

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Impact of Executive Budget with no change to existing funding formula

- Potential $4.7 million reduction for BSC creates dramatic changes
  - BSC position reductions
    - 65% of operating expenses are employee wages and benefits
  - High priority programs delayed or reduced (high operating cost/high demand)
    - Cybersecurity
    - Agriculture
    - Energy
    - Healthcare
    - Manufacturing/Automation
  - Lack of skilled talent creates negative economic impact to ND
    - Results in delayed economic growth due to fewer companies expanding or locating in ND
    - A loss in economic opportunity

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Challenges of COVID

- Most classes moved online

- Stressed workforce
  - Working from home, caring for family, online learning – all disrupted employees lives and their ability to serve our students

- To address challenges BSC used $4.2M state CARES funding to:
  - Install technology in classrooms ($1.9M)
  - Upgrade online learning environment for students ($550,000)
  - Make HVAC upgrades ($850,000)
  - Provide personal protective equipment (PPE) and sanitation ($460,000)
  - Provide other student-related COVID costs ($440,000)
    - Quarantine overflow costs – hotels
    - COVID case managers

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Next biennium plans (2021-23)

- Advance North Dakota's Polytechnic Institution

- Invest in students – they stick, they stay
  - In 2017, 81.4% of ND high school graduates who earned an associate's degree from BSC stayed in the state for employment or re-enrolled in an NDUS school within one year of graduation.

- Investment will drive ND future digital economy
  - Design, develop and implement new cyber and digital 2- and 4-year degrees
  - Expand business and industry partnerships (P3s)
  - Advance ND's economic development
    - Amazon, Bobcat, Cloverdale

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Next biennium goals

- Build the highly-skilled talent for industry needs
- Expand P3s in order to:
  - Implement emerging and advancing technologies
  - Establish more career pathways for students in K-12
  - Design, develop and implement stackable certificates, two- and four-year degrees
    - Automation Management/Industrial Automation
    - Mechatronics Engineering
    - Supply Chain and Logistics Management
    - Process Control and Instrumentation
    - Other high priority degrees as defined by industry

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INTERNET of THINGS INDUSTRY 4.0

COMMUNICATIONS
- Global access
- Reduce costs and energy

MEDICAL
- Maintaining uptime of devices
- Remote monitoring

INDUSTRIAL
- Smart Connected Products
- Quality Control

AGRICULTURE
- Soil quality
- Weather conditions

UTILITIES
- Demand management
- Response Applications

ENVIRONMENTAL
- Weather Analysis
- Reduce traffic congestion

AUTOMOTIVE
- Streamline manufacturing
- Analyze vehicle behavioral data

MILITARY/DEFENSE
- Recognize/Identify targets
- Defense intelligence

RETAIL
- Personalized advertisements
- Automated checkouts

HOME
- Smart Temperative Control
- Optimized energy use

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North Dakota's Polytechnic Institution

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polytechnic.

Hands-on learning. WORKFORCE READY.

At North Dakota's Polytechnic Institution, learning is hands-on and grounded in the principles of STEAM (science, technology, engineering, the arts and mathematics). The curriculum is designed in collaboration with business and industry partners focusing on high-priority occupations. Students learn during internships, through cooperative projects and in state-of-the-art classrooms. Whether studying arts and sciences or pursuing highly technical programming, North Dakota's Polytechnic prepares students to be workforce ready and succeed wherever their educational journey takes them.

STUDENT
You choose. You learn.
You gain practical skills for the workplace and life.

EMPLOYER
You consult. You support.
You design curriculum, enhance community, and help shape lives.

THE POLYTECHNIC ADVANTAGE

Hands-on practical and purposeful learning.

Flexible career pathways that fit your life.

Professional connections to enrich your career.

FLEXIBLE. AFFORDABLE. TRANSFERABLE.

Maximize your potential at:
bismarckstate.edu/polytechnic

Public Private Partnerships (P3s)

- Public private partnerships are economic force multipliers that advance innovation beyond what traditional partnership structures cannot achieve.

- Future economic development opportunities will require the public and private sector to operate outside of their silos.
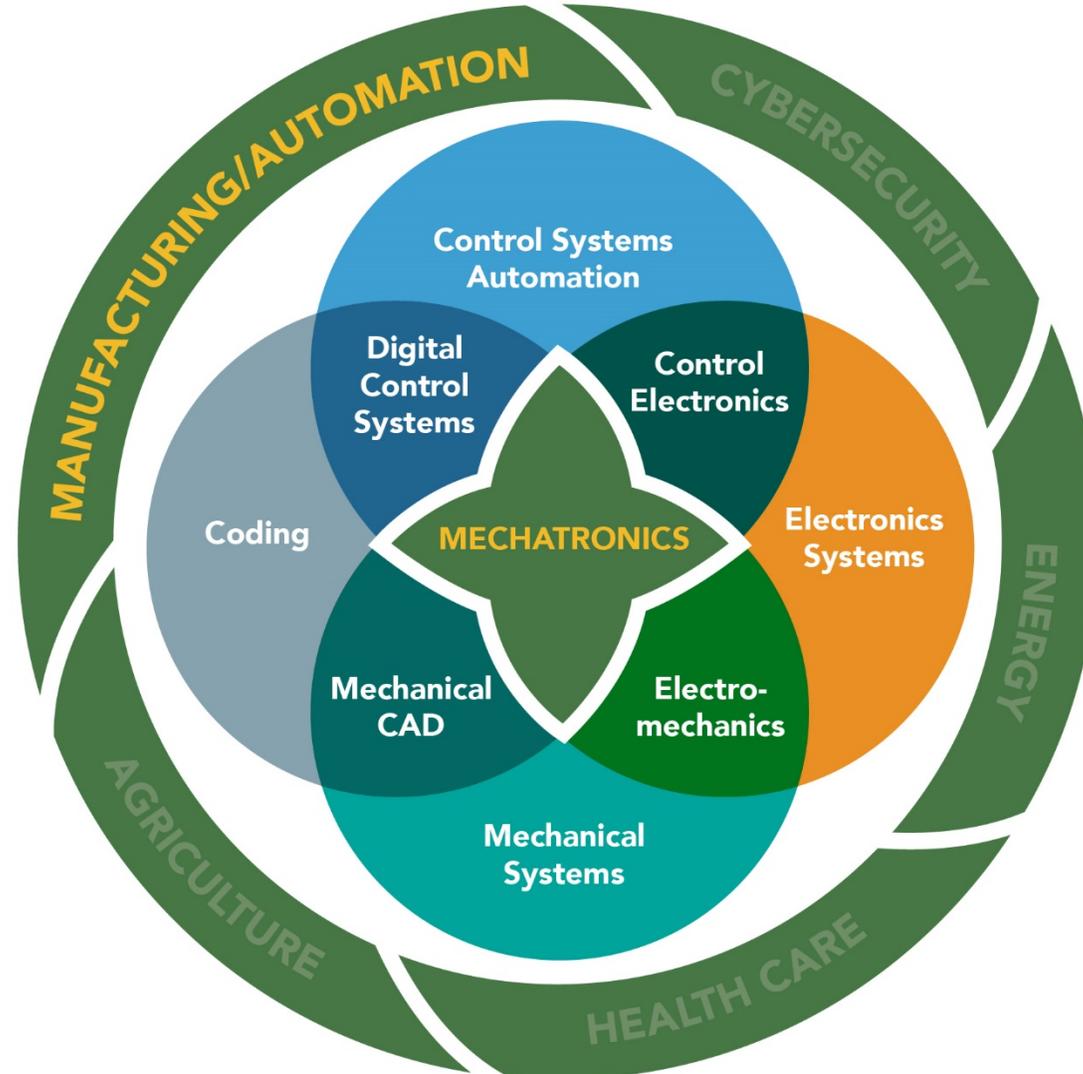
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FLEXIBLE. AFFORDABLE. TRANSFERABLE.

MECHATRONICS PATHWAY

MECHA-TRONICS

INDUSTRY 4.0

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STUDENT/EMPLOYEE/LEARNER

CAREER PATHWAY

BACHELOR'S DEGREE OF APPLIED SCIENCE IN MECHATRONICS

STANDARD ASSOCIATE IN AUTOMATION TECHNOLOGY DEGREE
OR
ADVANCED TECHNOLOGY DEGREE

GENERAL ED. LIBERAL ARTS GRADUATION REQ.

ADVANCED TECHNOLOGY DEGREE

STANDARD ASSOCIATE IN INDUSTRIAL AUTOMATION DEGREE

TRADITIONAL DEGREE PATH

INDUSTRY SPECIFIC CERTIFICATE

MECHATRONICS SYSTEMS OPERATOR CERTIFICATE
(16 Credits)

INDUSTRY SPECIFIC CERTIFICATE

MECHATRONICS SYSTEMS TECHNICIAN 1 MSTI CERTIFICATE
(16 Credits)

1 YEAR TECHNICAL DIPLOMA MECHATRONICS

GENERAL ED.

MECHATRONICS SYSTEMS TECHNICIAN 2 MSTI CERTIFICATE
(16 Credits)

PUBLIC PRIVATE PARTNERSHIPS & CAREER PATHWAYS

EMPLOYER

Our request

1. Fund proposed changes to higher education funding formula for career and technical education and cybersecurity

2. Provide $5M for new polytechnic program startup investment to support 5-7 new BAS programs in high demand areas (Manufacturing/Automation, Cybersecurity, Energy, Agriculture, Healthcare)

3. Continue ND Challenge Grant program to secure matching funds for endowed scholarships

4. Support and fund BSC's capital project needs

1. Fund proposed changes to higher education funding formula

- Increases funding for career and technical education and cybersecurity programs
  - Weight for Cybersecurity/Computer Science changes from 1 for freshman/sophomore classes to 2.5; and from 2 for junior/senior classes to 5.
  - Weight for Career/Technical changes from 2 to 3 or 5 (depending on program).

NOTE: North Dakota needs highly-skilled, technical talent to respond to job growth demand. Without these investments the capacity to meet this demand will be severely delayed.

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2. Provide $5M for new polytechnic program startup investment

- Supports 5-7 new BAS programs in high demand areas
  - Advanced Manufacturing, Mechatronics Applied Engineering, Digital, etc.

- Each new polytechnic program requires ≈$1M startup investment
  - Capital investment for equipment and program facility enhancements
  - Faculty with industry experience
  - Curriculum and content development
  - Instructional and lab supplies
  - Recruitment and partnership development
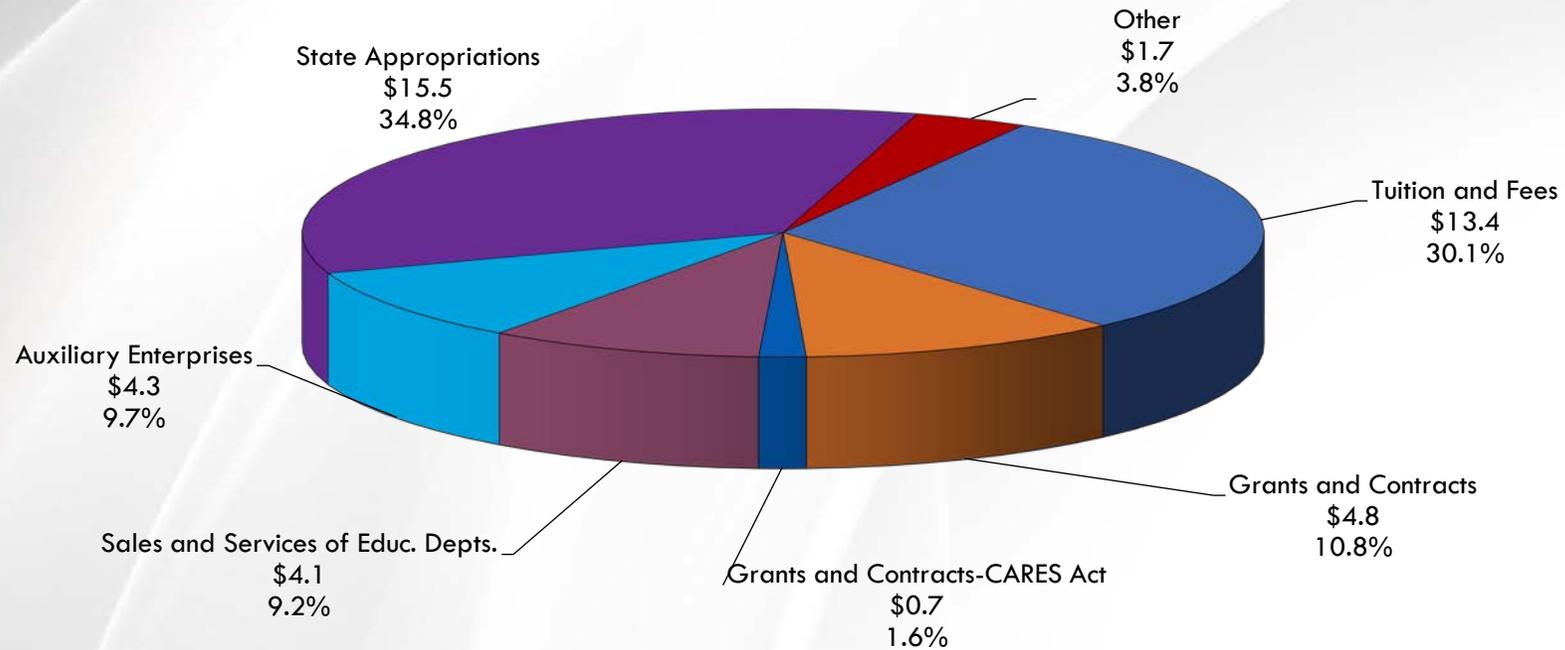
3. Continue ND Challenge Grant program

- Creates excellent public/private partnerships

- Leverages funding to support educational scholarships

- Incentivizes donors to support BSC students through matching funds

- BSC Foundation successfully obtained all eligible matches each biennium to invest in endowed scholarships
  - 2013-19: $2.5M investment provided $7.5M benefit to students
  - 2020-21: $950K investment provided $2.85M benefit to students

4. Support and fund BSC's polytechnic capital project needs

- Integrating the arts and humanities into STEM programming (STEAM)

- Megalabs

- More instructional/lab space for hands-on-collaborative learning, equipment, classroom and project space

- More K-12 collaboration

- Better meet coding, cybersecurity, and digital skill demand

- Enhance public/private partnerships (P3s), opportunities and collaboration
  - Cyber Range, Emerging Digital Academy, Hour of Code

FY20 Total Revenue, Excluding Capital

Fiscal Year 2020
Total Revenue $44.5 million

Other
$1.7
3.8%

State Appropriations
$15.5
34.8%

Tuition and Fees
$13.4
30.1%

Auxiliary Enterprises
$4.3
9.7%

Grants and Contracts
$4.8
10.8%

Sales and Services of Educ. Depts.
$4.1
9.2%

Grants and Contracts-CARES Act
$0.7
1.6%

BSC

FY20 Operating Expenses by Function
(excluding capital items and other nonoperating expenses)

Fiscal Year 2020
Total Operating Expenses: $47.2 million

Depreciation, $2.7, 5.7%

Auxiliary Enterprises, $5.5, 11.7%

Scholarships and Fellowships, $1.3 2.7%

Physical Plant, $4.4 9.3%

Institutional Support, $6.6 14.0%

Student Services, $3.9 8.3%

Academic. Support, $2.7, 5.7%

Instruction, $20.1 42.6%
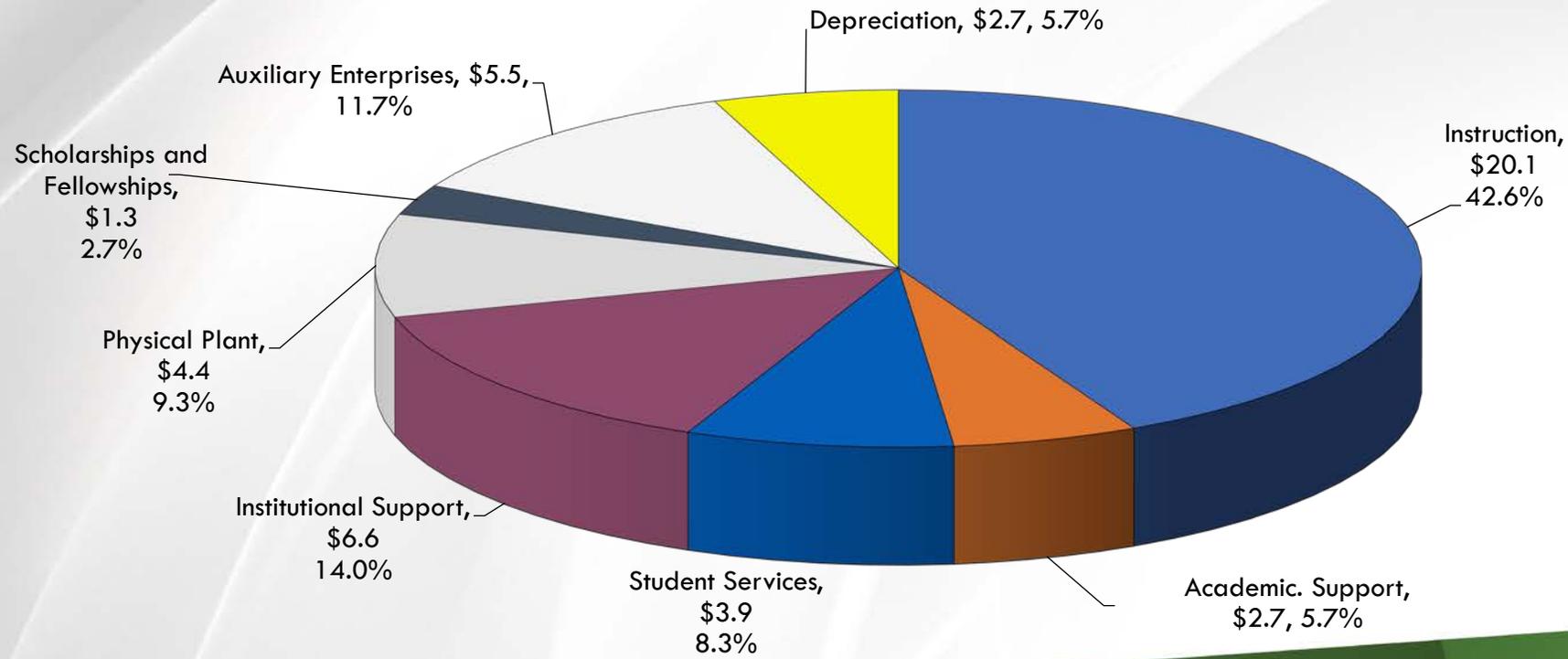
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Addendum

Student profile – Fall 2020

PROGRAMS

Liberal Arts	990	27%
Technical	1,583	43%
BAS	210	6%
Non-Degree		
Early Entry	657	18%
Other	276	7%

MODE OF EDUCATION

Face-to-Face	1,282	34%
Blended		
(Face-to-Face + Online)	1,053	28%
Distance/Online		
In North Dakota	828	22%
Out-of-State	553	15%

2,335 on campus

FINANCIAL AID

Offered Aid	1,685
Any Federal Aid	1,266
Pell Grant	462
Supplemental Grant	195
Federal Loan	531
Work-Study	78
Indian Scholarship/Tribal Grant	19
Other ND Grant/Scholarship	819
BSC Scholarship/Waiver	350
Other Grant/Scholarship/Waiver	468
Other Loan	92

Destination of ND high school graduates

| Fall 2020	Total first-time freshmen	Total first-time freshmen from ND*	% of first-time freshmen from ND with total first-time freshmen	Number of ND first-time freshmen HS Grad Past Year
BSC	795	748	94.09%	620
NDSU	2307	809	35.07%	750
UND	1614	674	41.76%	535
NDSCS	683	371	54.32%	301
MiSU	396	235	59.34%	208
WSC	283	197	69.61%	147
LRSC	181	145	80.11%	114
VCSU	195	134	68.72%	120
DSU	224	136	60.71%	104
DCB	122	74	60.66%	51
MaSU	142	77	54.23%	64

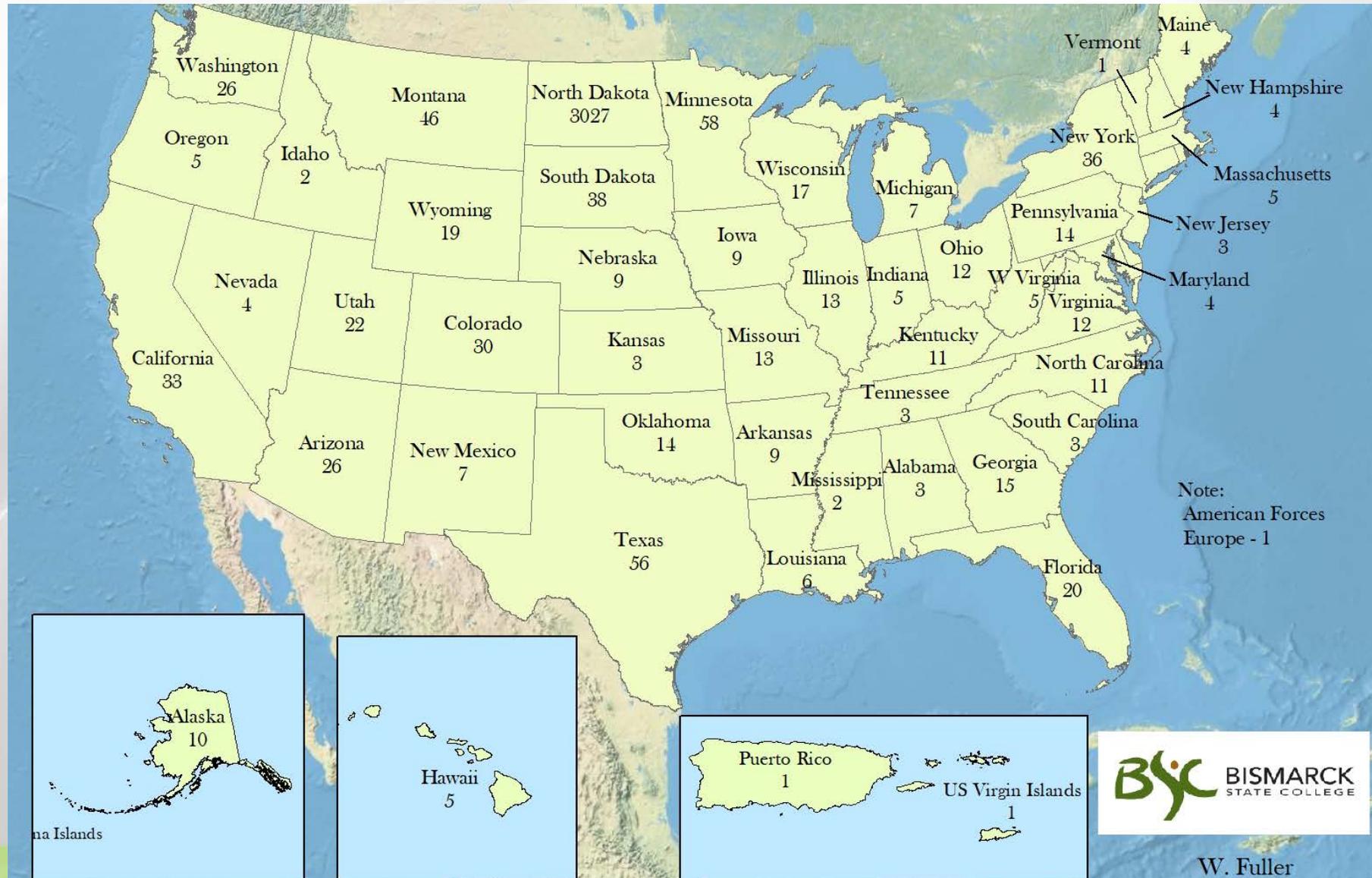*Not reported: % of all ND high school graduates enrolling directly from high school

4ᵗʰ week enrollment Fall 2020

	Fall 2018	Fall 2019	Fall 2020	2019-20 Change	2019-20 % Change
Enrollment					
PT headcount	1738	1706	1761	+55	+3.2%
FT headcount	2040	2033	1955	-78	-4%
Total Headcount	3778	3779	3716	-63	-1.7%
FTE	2645	2598	2558	-40	-1.6%
Total Credit Hours	39,167	38,971	38,372	-599	-1.6%

BSC 4th week Fall 2020 enrollment - ND
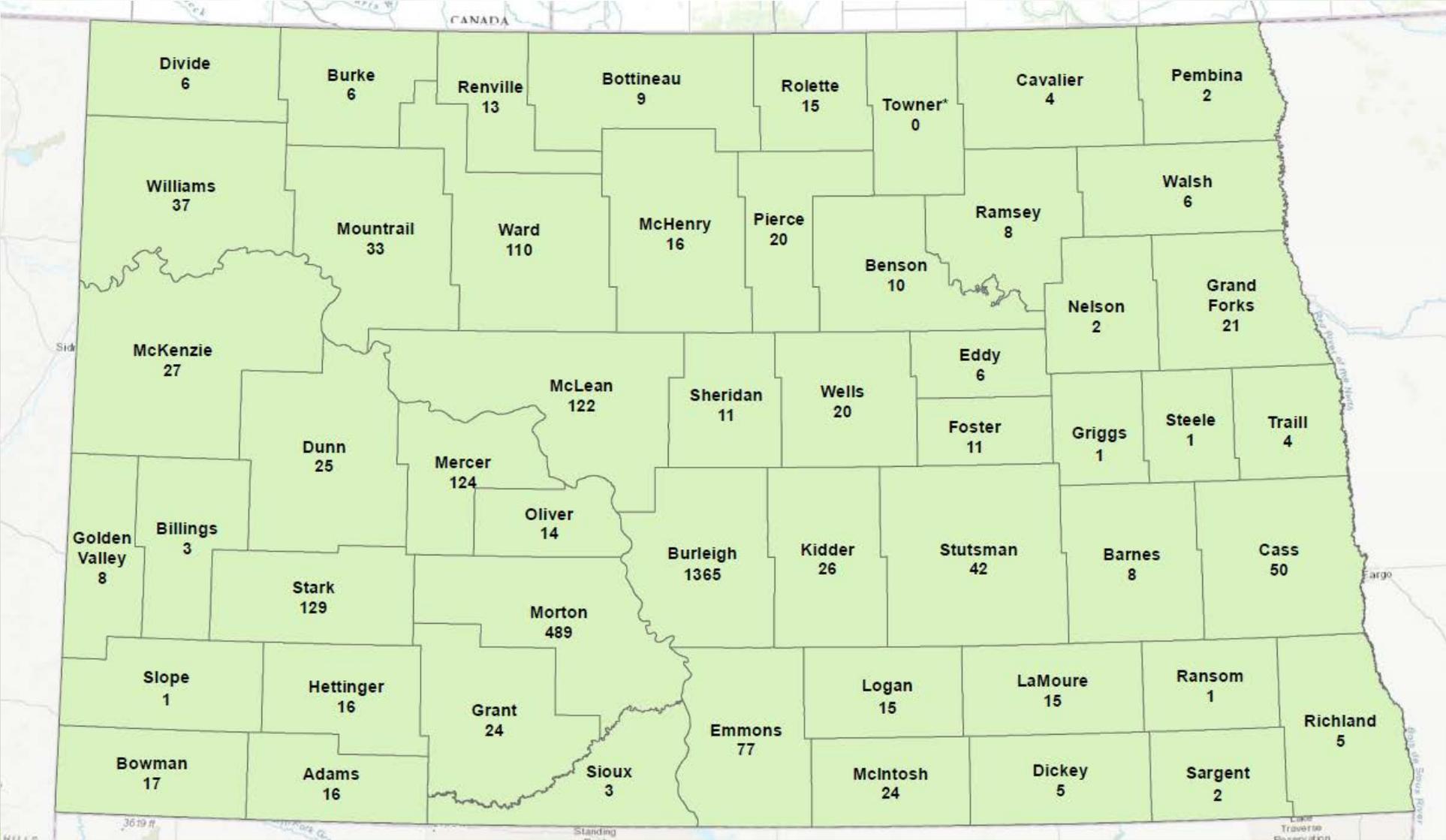
BSC student enrollment 4th week Fall 2020 – U.S.