Outh Dakota Public Higher Education: Educating South Dakota's Workforce of Today and Tomorrow

Board of Regents

2021

ECONOMIC IMPACT REPORT



99- Black Hills State University Yellow Jackets

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South Dakota Higher Education

STRENGTHENING SOUTH DAKOTA'S WAY OF LIFE

\$2.1 billion in economic impact

12,354 jobs supported and sustained \$74.1 million

in local and state taxes

HOMEGROWN CREDENTIALS TO SUPPORT OUR HOMETOWNS

2,990 nurses 294 doctors 3,914 teachers 303 lawyers 378 pharmacists

ENGAGED, EFFICIENT & LEAN

Consolidation of administrative functions yields cost savings

Reducing majors to avoid duplication and low enrollment

Collaboration between USD, DSU, and the Community College for Sioux Falls

West River Health Sciences Center is a BHSU and SDSU collaboration to expand nursing and health occupations in western South Dakota

OPEN ACCESS SUPPORTS LIMITLESS POTENTIAL

34,520 total students
6,655 graduates each year
21,423 students from SD attending university
46% of students stay in SD to live and work
4.2% are first-generation college students
2.6% of students are American Indian
79% of students receive financial aid (grants, loans,and/or scholarships)

NIMBLY RESPONDING TO WORKFORCE NEEDS

South Dakota public institutions are addressing significant workforce and education gaps in business, finance, early childhood education, teaching, accounting, sustainability studies, hospitality management, agriculture, general studies, health professions, and psychology.

Expansion of master's degree programs in registered nursing and business management.

4

Makes an Impact

6 universities 1 master plan to educate professionals

of the future

1 overarching governance body – South Dakota Board of Regents

- 1 unified vision with six voices
- **1 South Dakota**

INDEPENDENT BUT

DUAL ENROLLMENT

5,746 students enrolled in 8,078 courses at six universities

189 high schools participating

Cost savings of dual enrollment saves the students and saves the state

ENRICHING ECONOMIC ENGINES

\$168.5 million research impact generated and 974 jobs supported and sustained

437 engineering graduaties

374 information technology graduates

338 agriculture and veterinary sciences graduates

COMMUNITY HUBS

\$13 million in volunteerism with nearly 550,000 hours

\$3.8 million in philanthropy for community charities

\$16.8 million in total giving by faculty, staff, and students

BLOOM WHERE YOU'RE PLANTED

\$300.9 billion in impact generated from alumni over their 40-year careers supporting 1.9 million jobs

104,937 alumni living and working in the state



"Our public universities are working as one to serve the education and workforce needs of South Dakota. Our regental system serves the distinctive needs of our students and demands of industry while being careful stewards of the state's dollars."

> Dr. Brian Maher Executive Director & CEO, South Dakota Board of Regents

Introduction

South Dakota's six public universities each have a unique identity.

And under the strong leadership of the Board of Regents, together they form a coordinated, unified system in which each performs a vital function in educating the sons and daughters of South Dakota. From their beginnings as typical schools before South Dakota was admitted to the Union to the cutting-edge research and first-class education they provide today, the universities have been the backbone of higher education in the Mount Rushmore State. Every year more than 30,000 students from small towns and big cities across the state attend Black Hills State University, Dakota State University, Northern State University, South Dakota School of Mines & Technology, South Dakota State University, and the University of South Dakota. The South Dakota Board of Regents oversees these universities with nimble precision that allows South Dakota to stay at the forefront of a changing world.

The South Dakota regental system plays a powerful role in the state's economy. Taken together, they supported a total of **12,354 jobs** across the six universities¹ and administrative offices and generated **\$2.1 billion** in annual economic impact in the fiscal year 2019.



¹ Public universities in this study refer to those under the South Dakota Board of Regents: Black Hills State University, Dakota State University, Northern State University, South Dakota School of Mines & Technology, South Dakota State University, and The University of South Dakota.

About the Study

In July 2021, the South Dakota Board of Regents (SDBOR) engaged Parker Philips Inc. to measure the economic contribution of public higher education overall and of each of South Dakota's six universities, individually. This analysis aims to tell the university system's story from a numbers and narrative perspective. To develop this report, Parker Philips gathered student, financial, and employment data about each university, visited and toured each campus, conducted multiple interviews, and researched secondary data and information to inform the writing and critical messages.

Financial & Data Gathering Campus Visits & Key Stakeholder Interviews

Analysis & Reporting

OVERVIEW

Methodology:	IMPLAN
Geography:	South Dakota
Fiscal Year:	2019 (FY 19)
Institutions Included:	Black Hills State University Dakota State University Northern State University South Dakota School of Mines & Technology South Dakota State University University of South Dakota South Dakota Board of Regents
	-



In October 2021, the task force released a report that includes 35 separate recommendations across several areas. Recommendations include a range of cost-saving measures, including combining some administrative systems across universities and consolidating contracts, targeted consolidation of some academic programs, and expanded use of data to address issues such as enrollment trends, class size, program size, and central office staffing and functions. The Board of Regents is committed to full consideration of each recommendation in the coming months.

As America's economy continues to adjust to rapidly changing circumstances in this country and across the world, South Dakota's public universities have never been more important. By delivering efficient, high-quality postsecondary education aligned to the current and emerging workforce and talent needs of South Dakota, the state's six universities are the foundation of South Dakota's well-being — both now and in the future. This report details the total economic impact of South Dakota's public university system and provides rich evidence of its total value for the people of South Dakota.





The primary tool used in the performance of this study is the input-output model and data set developed by IMPLAN Group LLC. Financial data used in this study was obtained from SDBOR and included the following data points: operational expenditures, capital expenditures, and payroll and benefits for employees for FY 19. Secondary data was used to estimate spending by visitors (day and overnight) and students (undergraduate and graduate) exclusive of tuition and fees. Additional information on the methodology and assumptions used to complete this study can be found in Appendix C.

The impact presented in this analysis is broken down into three categories: direct impact, indirect impact, and induced impact. The indirect and induced impacts are commonly referred to as the "multiplier effect." The graphic below provides an overview of the types of impact detailed in this report.



State of Higher Education in South Dakota

South Dakota's public university system occupies a uniquely important place in state residents' economic and social well-being. Enrolling more than 33,000 students across its six institutions and awarding over 6,600 undergraduate and advanced degrees each year. South Dakota's public universities are a primary economic engine of the state. This is underscored by the fact that the state is home to only five private, nonprofit four-year colleges and universities. South Dakota's public university system is an integral part of the state's future.

Like nearly every state in the country, South Dakota's public universities face undeniable challenges – declining population, decreased student enrollment, affordability of higher education, and decreased state appropriations.

- As the numbers of high school graduates have dropped, total enrollment in the state's public universities has declined 8.1% over the past five years with enrollment shifts varying substantially across the six institutions.
- According to the State Higher Education Executive Officers (SHEEO), education appropriations per FTE in South Dakota have decreased 29.1% since 1980, and in 2019 public institutions received \$5,817 per full-time equivalent student about 71% of the U.S. average. The state has increased financial aid during that time period; in two decades the amount of state aid has increased 4,274% and has risen from .1% to 4.7% of all education appropriations.
- Among six neighboring states (Iowa, Minnesota, Montana, Nebraska, North Dakota, and Wyoming), the annual cost for undergraduate tuition and fees in South Dakota is second only to Minnesota. Total costs for tuition, fees, and room and board were \$16,251 in South Dakota's public universities in 2019.

South Dakota's public universities are tackling these unprecedented challenges and will develop new strategies and tactics to ensure that they serve the state's economic and social well-being. The Board of Regents, individual universities, and statewide leadership are working together to ensure an efficient and effective public higher education system that serves the needs of South Dakota's citizenry.

Senate Bill 55

Senate Bill 55 was enacted by the South Dakota Legislature in 2020 requiring the Board of Regents to form a task force to review the operations of the six public universities and provide a set of recommendations to increase efficiency and achieve cost savings. This request aligned well with the mission of the Board of Regents to ensure that taxpayer and student dollars that flow to the six public universities are being used as effectively as possible. Task force members met collectively six times and convened 20 subcommittee meetings as they conducted this work.

Fueling South Dakota's Economy

Universities contribute to the local and statewide economies through their expenditures on operations, capital projects, wages, the spending of students off campus, and the spending of visitors to campus. The direct, day-to-day expenditures of the universities, combined with student and visitor spending, cause a ripple effect throughout the statewide economy. The total economic impact of the universities in FY 19 totaled **\$2.1 billion**, which is **4% of the South Dakota economy**. This contribution to the local and statewide economies is a point-in-time snapshot depicting how the expenditures of the university system and its faculty, staff, students, and visitors make an impact.

Operations and Spending Contribution

The universities' operations and capital spending in FY 19 contributed a total of **\$1.8 billion**. The universities' operations generated \$1.1 billion in direct economic impact, \$305.2 million in indirect economic impact, and \$420.9 million in induced economic impact.

Student Spending Contribution

South Dakota's public university students contributed a total of **\$273.5 million** to the state's economy in FY 19 as a result of their spending. They generated \$180.1 million in direct economic impact, \$47.5 million in indirect economic impact, and \$45.9 million in induced economic impact.

Visitor Spending Contribution

Visitor spending contributed a total of **\$55.0 million**. Visitors to all universities generated \$33.3 million in direct economic impact, \$11.6 million in indirect economic impact, and \$10.1 million in induced economic impact.

Combined Economic Impact (FY 19)

\$1,777,172,334 total operations spending		4	Direct Spending:	\$1,051,077,820	
			ndirect Spending:	\$305,178,631	1
			nduced Spending:	\$420,915,883	
	^{\$} 273.543.921		Direct Spending:	\$180,099,960	7
	total student		ndirect Spending:	\$47,561,254	/
spending			duced Spending:	\$45,882,707	
	\$55.022.986		Direct Spending:	\$33,342,449	7
	total visitor		ndirect Spending:	\$11,555,809	/
	spending		nduced Spending:	\$10,124,728	
\$2.105.	739.241	Total Di	rect Spending:	\$1,264,520,229	
total combined economic impact		Total Indi	rect Spending:	\$364,295,694	1
		Total Indu	ced Spending:	\$476,923,318	1

Source: Parker Philips using IMPLAN with data from SDBOR



Case Study:



USD MED SCHOOL GRADS OFFER HOPE TO SOUTH DAKOTA'S HEALTHCARE DESERTS

"Healthcare deserts" – areas that lack basic access to adequate medical care – exist in most parts of South Dakota. According to the South Dakota Department of Health, healthcare deserts exist in 52 of the state's 66 counties in 2021. Lack of access to mental healthcare is even more acute, existing in 60 counties. Whether due to a shortage of primary care physicians or nurses, the absence of hospitals and trauma centers within a reasonable driving distance, or a lack of internet to access telemedicine, many South Dakotans struggle to address their medical needs. As a result, the physical and economic well-being of rural communities are at risk.

The University of South Dakota's Sanford School of Medicine has been nationally recognized for its sustained efforts to fill these gaps. In 2017, the school received the highest honor conferred upon medical schools by the Association of American Medical Colleges, the Spencer Foreman Award for Outstanding Community Service. The award recognizes schools with a long-standing commitment to partnering with communities to meet medical needs. USD's medical school stood out largely because of its reach statewide, with students spreading out across the state to learn, work, and serve in both cities and rural communities across South Dakota.

These students are supported by programs like Frontier and Rural Medicine, or FARM, which pairs medical students with family physicians in rural communities such as Milbank, Parkston, Winner, and Pierre. FARM helps students learn what it's like to work and thrive in small-town clinics and hospitals.

Dr. Matthew Owens, a 1993 graduate of USD Sanford School of Medicine who is board certified in family medicine and operates a rural practice in Redfield, SD, is making an impact by serving a community of about 2,200 residents in the northeast quadrant of the state. He joins four other USD Sanford School of Medicine MD graduates practicing in a small 17-bed hospital attached to a rural health clinic. "I don't think you're going to recruit a lot of physicians into rural South Dakota from outside the state. USD Sanford School of Medicine drives rural healthcare in South Dakota and makes our small communities strong," says Owens. This healthcare system is a major economic engine of the area, employing 129 healthcare professionals ranging from speech therapists to nurses and hospital administrators to cleaning crews.



"I've been in Redfield for 20 years. I am part of the community. I support my patients, and they support me and my family. You can't put a price tag on that."

Dr. Matthew Owens Physician, Redfield, SD

Strengthening South Dakota's Workforce

South Dakota's six public universities support a total of **12,354 full- and part-time jobs** throughout the state -2.7% of South Dakota's workforce. Indirect and induced jobs are also generated via construction for campus projects, retail, restaurants, daycare, real estate, and banking - to name a few.

4,852 direct

jobs at South Dakota Public Higher Educational Institutions support an additional 7,502 jobs

Jobs Generated by **University Operations**

University operations supported and sustained a total of 9,426 jobs: 4,852 direct jobs, 1,792 indirect jobs, and 2,782 induced jobs.

Jobs Generated by **Student Spending**

South Dakota state university students supported and sustained a total of 2,411 jobs as a result of student spending: 1,845 direct jobs, 263 indirect jobs, and 303 induced jobs.

Jobs Generated by Visitor Spending

Visitors to all universities supported and sustained a total of 517 jobs as a result of their spending: 376 direct jobs, 74 indirect jobs, and 67 induced jobs.

Based on analysis by industry sectors, other jobs supported by the university's economy outside of the higher education and healthcare sectors include jobs in real estate, retail, and services (e.g., restaurants, child-care centers, and entertainment).

Combined Employment Impact (Jobs, FY 19)



Source: Parker Philips using IMPLAN with data from SDBOR

A Degree Makes a Lifelong Impact on South Dakota

A higher education credential changes outcomes not just for individuals but also for their families and the entire South Dakota economy and quality of life. College degrees lead to opportunities for a lifelong career, financial stability, and better overall health and well-being. In today's world, educational attainment plays an even more significant role in other aspects of people's lives — it increases opportunity and improves overall quality of life and longevity.

Increased Lifelong Earnings

Pursuing a college degree is an investment in future earnings and a higher quality of life. Education is the clearest personal pathway to increased earnings and economic security. The relationship between higher education and higher lifetime earnings is well-established. The median salary of an individual increases by 67.3% from a high school degree to a bachelor's degree.² The earning power of a college degree is experienced over a career and a lifetime. People with a bachelor's degree earn an average of \$1 million more over the course of their 40-year career than those with a high school diploma.

According to the U.S. Bureau of Labor Statistics, the average salary earned by a person with a bachelor's degree in the United States (U.S.) is \$64,896, which is \$33 per hour. This does not include the benefits packages and fringe benefits offered as a part of a regular compensation package. Future earnings will be higher or lower based on degree type.



U.S. Median Wage by Degree Type



² All salary data is sourced from the U.S. Bureau of Labor and Statistics. https://www.bls.gov/careeroutlook/2020/data-on-display/education-pays.htm

Decreasing Crime and Associated Costs

Decades of research has shown that educational attainment decreases a person's likelihood of engaging in criminal activity. A community's education level correlates to how safe it is – better-educated communities have lower levels of crime, and therefore need fewer public dollars for incarceration and the criminal justice system. In 2015, South Dakota reported spending over \$73 million on its prison systems across the state – about \$20,700 per inmate.³ South Dakota benefits from a strong and well-supported public university system because more college graduates mean less crime, more community engagement, and a larger share of tax dollars available to invest in improving the lives of South Dakotans.

Unemployment and Earnings by Degree Type, 2019

Un	employme Rate	Median nt Annual Earnings	Median Weekly Earnings	Difference in Annual Earnings Over Previous Degree Type	% Change Over Previous Degree
Doctorate Degree	1.1%	97,916	\$1,883	\$20,072	1.2%
Master's or Professional Degree	2.0%	\$77,844	\$1,497	\$12,948	20.0%
Bachelor's Degree	2.2%	\$64,896	\$1,248	\$18,772	40.7 %
Associate Degree	2.7 %	\$46,124	\$887	\$2,808	6.5%
Some College but No Degree	3.3%	\$43,316	\$833	\$4,524	11.7 %
High School Diploma	3.7 %	\$38,792	\$746	\$8,008	26.0 %
Less Than a High School Diploma	5.4 %	\$30,784	\$592		

Source: U.S. Bureau of Labor and Statistics, 2019 Analysis by Parker Philips, Inc.

³ Vera Institute of Justice.

https://www.vera.org/publications/price-of-prisons-2015-state-spending-trends/price-of-prisons

South Dakota's Talent Base Makes an Impact

The impact of South Dakota's college graduates during the course of their careers is significant. In 2019, more than 6,665 students graduated from South Dakota's public higher education institutions. Many graduates plant their roots in the communities where they earned their degree, shoring up the strength of available human capital. Relationships formed between the universities and private corporations such as Sanford Health, Nieman Enterprises, and Agtegra Cooperative help grow and sustain the workforce and economic activity throughout South Dakota.

South Dakota public higher education's alumni that stay in the state to live and work after graduation make an outsized impact on the state's economy. The earnings of the **104,937 alumni** from South Dakota's public institutions living and working in South Dakota over the course of their 40-year careers will total **\$287.5 billion**, support and sustain a cumulative total of **1,913,003 jobs**, and generate **\$12.9 billion** in tax impacts at the local and state levels.

Increasing Longevity and Quality of Life

Education level plays a major role in determining an individual's quality of life. In the past 20 years, the life expectancy gap between the most educated and the least educated Americans has widened. Americans with less education are more likely to have serious health conditions than those with a higher level of education. Year after year, data from the Bureau of Labor Statistics shows that people with a university credential are more likely to have higher wages, employer-sponsored healthcare, paid vacation and leave, retirement savings, and work in lower-risk occupations. Educational attainment also usually leads to the ability to live in a safer neighborhood, which is also a social determinant of health.⁴

Educational attainment is a contributing factor to being able to have a better understanding of health issues, being able to self-advocate, and choosing a healthier lifestyle. People with a higher education are less likely to experience the stress created by social and economic troubles associated with lower earnings and less education. Highly educated adults are more likely to have stronger and broader social networks,⁵ which yields access to financial, emotional, and psychological resources, thereby reducing stress and providing coping mechanisms to protect them from adverse health effects. Higher education, among many other social determinants of health, matters to health outcomes.

⁴ Healthy People 2020. https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/enrollment-in-higher ⁵ Bauldry, Shawn. Conditional Health-Related Benefits of Higher Education: An Assessment of Compensatory versus Accumulative Mechanisms. Published online 2014 Apr 12. doi: 10.1016/j.socscimed.2014.04.005

Case Study:



COMMUNITY RESOURCES ARE A TANGIBLE VOTE OF CONFIDENCE IN NSU

Over the past 10 years, the Aberdeen community has contributed about \$150 million to Northern State University (NSU). That's a stunning amount of money from any city – particularly from one with a population of less than 30,000. It is tangible evidence that Aberdeen connects its future with the success of NSU.

State Senator Casey Crabtree attended NSU in the early 2000s and has first-hand knowledge of NSU's uniquely important relationship with Aberdeen and the entire northern region of South Dakota. "Walking around the NSU campus, you can really see what private investment has done for the university. It all came from people who really cared enough to make a difference in their community," said Senator Crabtree.

The \$150 million NSU has received in local investments has gone a long way toward strengthening NSU's educational offerings and expanding opportunities for local residents to take advantage of the University's rich array of extracurricular offerings. From 2013 to 2021, local contributions have contributed to student scholarships, supported the construction of the Jewett Science Education Center, and provided enhancements to the Regional Sports Complex and athletic fields and facilities. Local dollars also contributed to the renovation of the Johnson Fine Arts Center — a facility that annually hosts more than 65 concerts, theater performances, and community events and welcomes more than 7,600 guests per year.

"The university is incredibly important not only to the Aberdeen community but to the whole region. It's our No. 1 tool to not only attract new workforce from other states, but to develop our own workforce right here in South Dakota. That's why folks in Aberdeen are investing in NSU. When students have a great experience at NSU, they'll stay and continue to be part of the workforce and carry on the legacy of Northern."

> Casey Crabtree South Dakota State Senator

Case Study:



OFFERING A DISTINCTIVE COLLEGE EDUCATION TO THOSE WHO SERVE OUR COUNTRY WITH DISTINCTION



The U.S. military is one of the backbones of South Dakota's economy and culture. It is the second-largest employer in South Dakota, powered in large part by historic Ellsworth Air Force Base (EAFB). Established a few miles from Rapid City in 1941, EAFB has served a role in several wars and as home base to critically important Air Force defense operations and training. EAFB is home to about 8,000 people including military members, their families, and civilian employees, and is one of the largest employers in the region. About 3,800 veterans also call western South Dakota home.

Black Hills State University (BHSU) has a 60-year history of supporting western South Dakota's military by offering courses at Ellsworth Air Force Base. This fall, the partnership has been elevated to a new level. BHSU competed for and won a contract to operate a local campus on base, delivering distinctive undergraduate and graduate programs to those who serve our country with distinction.

"The Air Force is technically driven, and this partnership with Black Hills State University will further develop these airmen's knowledge. They're learning the critical thinking skills the Air Force needs in maintaining airplanes and staffing hospitals."

> Roger Wilson Chief, Education and Training Ellsworth Air Force Base

Generating Local and State Tax Revenues

The universities' employees, suppliers, and related constituencies contribute to the local and statewide tax bases. In FY 19, the universities contributed an estimated **\$74.1 million** (\$41.0 direct and \$33.1 million indirect and induced) through local spending (operational, capital, students, and visitors) as well as direct and indirect support of jobs. At the state and local levels, South Dakota's public universities contribute to the tax base through their purchasing, student, and visitor spending. Specific taxes include employee and employer contributions to state and local social-insurance funds, sales and use taxes, personal property taxes, taxes paid on motor-vehicle licenses, and payments of fines and fees

Combined State and Local Tax Impacts (FY 19)

	SUB COUNTY GENERAL	SUB COUNTY SPECIAL DISTRICTS	COUNTY	STATE	TOTAL
DIRECT	\$7,859,825	\$9,008,904	\$3,633,987	\$20,510,042	\$41,012,758
INDIRECT	\$2,246,345	\$2,580,333	\$1,024,027	\$5,673,003	\$11,523,708
INDUCED	\$4,227,382	\$4,856,512	\$1,925,657	\$10,586,108	\$21,595,659
TOTAL	\$14,333,552	\$16,445,749	\$6,583,671	\$36,769,153	\$74,132,125



Case Study:

DAKOTA STATE

DSU APPLIED RESEARCH LAB – CUTTING EDGE OF CYBERSECURITY

Dakota State University (DSU) is small but mighty. The 3,200-student university in Madison is a national leader in cyber education and currently holds four Centers of Academic Excellence designations from the NSA and Department of Homeland Security: Cyber Defense Education, Cyber Defense Research, Cyber Operations, and Cyber Defense Consultative Regional Resource Center. Graduates of DSU's cybersecurity majors are in demand: The Beacom College of Computer and Cyber Sciences has a 96% placement rate for undergraduates and a 100% placement rate for graduate students.

Madison Cyber Labs – affectionately known as MadLabs[®] – is a perfect example of how DSU's cybersecurity expertise keeps our country safe while also contributing to the economy of the Madison region and beyond. MadLabs[®] draws new talent to the state and the region, attracting elite scholars, researchers, professionals, and partnerships with government, businesses, nonprofits, and other higher education institutions. This \$18-million, 40,000-square-foot building is the first research facility of its kind in the Great Plains.

The MadLabs[®] building and its associated programs are the result of a fruitful partnership between the university, the state, the federal government, and private donors. This includes \$30 million from PREMIER Bankcard President and CEO Miles Beacom and his

wife Lisa, along with Denny Sanford, owner of the Sioux Falls-based First PREMIER Bank and PREMIER Bankcard. Their gift is one of the largest single gifts to higher education in South Dakota history – and it's generating a ripple effect across the region. Additional support includes a \$10 million pledge from Governor Daugaard's Future Fund. The private and public funding sources are being leveraged to draw an additional \$20 million in support from federal sources and private donors. The synergy created by this coalition of advocates for higher education will support South Dakotans for generations to come.

"We can keep our very, very best and brightest students here after graduation to work in South Dakota at MadLabs[®]. And they're doing work of national security importance."



Case Study:

Homegrown Credentials to Support our Hometowns: **A South Dakota Town** Spotlight on: **Philip, SD**

South Dakota is a small-town state. Over 150 towns and municipalities house less than 1,000 residents, and another 60 have populations of 6,000 or less. Dotted across the landscape, these small towns and rural communities form the fiber of South Dakota's culture, providing a strong sense of community and a fierce loyalty to the South Dakota way of life.

Sometimes it's easy to forget that South Dakota's college graduates are in many ways the foundation of its small communities. Whether it's the pharmacist who shows a senior how to use a new medication, the teacher who educates a future governor, the accountant who supports the local grocery store, the health professional who delivers babies, the undertaker who helps families navigate the passing of a family member, or the lawyer who provides advice to family farms and ranches — South Dakota's college graduates provide the stability, services, and talent that keep its communities thriving.

The town of Philip provides a case in point. With a little under 800 permanent residents, Philip is located halfway between Pierre and Rapid City in the western part of South Dakota. This small town is a powerhouse in its region, providing a local hospital, nursing home and medical facilities; a public school district including a rural school; a locally owned pharmacy; a newspaper; a bank, a funeral home, and several local businesses.

Philip's residents don't have to drive 90 to 100 miles to meet their necessities — the town prides itself on having what they need. As a result, Philip is home to a growing number of young families eager to provide their children with the benefits of a small-town life with the advantages that Philip's strong cadre of college-educated professionals provide.

Courtney Kjerstad, owner of Philip's Dakota Country Pharmacy, is one of those professionals. Born and raised in another South Dakota small town — Gettysburg — Kjerstad graduated from SDSU and received her Doctor of Pharmacy degree in 2011. After spending two years in Arizona working for a large pharmacy chain, Kjerstad and her husband decided to return to South Dakota to raise their family.

"After having our first child, we decided it was time to move home and give our children the same wonderful opportunities we had growing up in rural South Dakota," said Dr. Courtney Kjerstad, owner, Dakota Country. "We found opportunity in the wonderful community of Philip, and we became owners of Dakota Country Pharmacy in 2014."

"I can't imagine doing anything else with my career because I love the satisfaction of knowing each and every one of my customers."

Dr. Courtney Kjerstad, owner, Dakota Country Pharmacy

A Neighborly Spirit

The spirit of South Dakota is neighbor helping neighbor, whether they are in Sioux Falls or Hill City. South Dakotans share a common spirit and set of values that are rooted in a love of the land and giving back to community. There is no shortage of ways that students, faculty, and staff give back to those in need with their time and their money. The presence of these universities in a community gives residents access to arts and cultural events, sporting events, and workout facilities that would otherwise not be available.



The USD music department staffs the National Music Museum in Vermillion, giving the community access to historical and archival information or the opportunity to see a student performance in the new Janet L. Wanzek Performance Hall.



NSU students support the South Dakota School for the Blind and Visually Impaired (SDSBVI) by assisting as student teachers and by volunteering to help in classes. SDSBVI students also use the NSU campus for mobility training.

Black Hills State University hosts the Madeline A. Young Distinguished Speaker Series. Community members and students can attend the speaker series that brings in world-class speakers such as novelist Michael Chabon, United Nations Ambassador Jeane Kirkpatrick, actor Danny Glover, and writer and Pulitzer Prize winner Doris Kearns Goodwin.



Giving Back to South Dakota

All of South Dakota benefits from the volunteerism and charitable giving of faculty, staff, and students. Based upon assumptions derived from the U.S. Census Bureau and the Points of Light Foundation regarding donation amounts and volunteerism rates by age, income level, and employment status, it is estimated that staff, faculty, and students give nearly \$3.8 million annually in charitable donations and volunteer for almost 550,000 hours, valued at almost \$13.0 million. In FY 19, the combined impact of charitable giving and volunteerism totaled nearly \$16.8 million. These benefits were in addition to the \$2.1 billion annual economic impact.

Charitable Giving and Volunteer Impact of All Universities

Staff and Faculty Charitable Giving	\$2,493,042
Student Charitable Giving	\$1,285,870
Total Charitable Giving	\$3,778,912
Staff and Faculty Volunteerism Hours	67,291
Student Volunteerism Hours	482,590
Total Volunteerism Hours	549,881
Value of Staff and Faculty Volunteerism Hours	\$1,585,386
Value of Student Volunteerism Hours	\$11,369,811
Total Value of Volunteerism Hours	\$12,955,197
Grand Total	\$16,734,109

Friday Night Lights

0.0

Pioneer Bai

Rooting for the home team is integral to life in college towns across South Dakota. These universities are gathering places that create and strengthen the sense of community as South Dakotans gather to cheer on the home team. Towns from Spearfish to Vermillion are behind these student-athletes.











SOUTH DAKOTA MINES



NSU has led the NCAA Division II in both men's and women's basketball game attendance for the last 13 years.

In the 2020 Olympics, Chris Nilsen, a 2020 graduate of USD, won the silver medal in the men's pole vault, clearing 19-7 — the highest an American has jumped in Olympic history.

At SDSU in 2019, a total of 87,764 people attended Jackrabbits' football games and listened as the marching band – "The Pride of the Dakotas" – performed at halftime shows.

Dakota State set an NAIA record for scholar-athletes — who must have a 3.5 GPA or higher to qualify — in 2020–2021.

BHSU and South Dakota Mines meet in the Black Hills Brawl every year, making this the longest-running rivalry in Division II football. BHSU won the first game in this rivalry in 1895, setting the tone of the future meetings between the two. The winner takes the Homestake Trophy, based on a prospector's pan.

Case Study:



SOUTH DAKOTA'S UNIVERSITIES ENHANCE THE QUALITY OF LIFE IN THEIR HOST COMMUNITIES

The value of a university cannot be fully captured in dollars and cents. A university is an integral part of the fabric of its host community. It can serve as a hub for social gatherings, recreation, sporting events, and the arts — creating a sense of community that is vital to the well-being of its residents and acting as a magnet that local businesses use to attract new talent to the area. Universities can also partner with businesses in the region to ensure their graduates have the skills and experience needed to hit the ground running and join the local economy. In turn, a university benefits from the engagement and talents of its hometown residents as they come to campus to cheer on sports teams, participate in charity events, and host student interns in local businesses. In university towns, both the community and the campus reap benefits too rich to capture in numbers alone.

Northern State University (NSU) is an integral part of the Aberdeen community — and locals don't take it for granted. Matt Campbell is CEO of MyPlace Hotels, an Aberdeen-based hospitality company with annual revenues of nearly \$90 million and over 50 hotels in 27 states. Campbell has particular insight into NSU's impact on the city of Aberdeen. For example, the university's athletic teams and alumni events draw visitors near and far to hotels in his network and others, as well as to local restaurants and shopping venues.

But even more important are the strong partnerships between Northern and local businesses that create a pipeline for placing talented interns and graduates into careers that will keep them in Aberdeen for years to come. Campbell points to long-standing relationships with academic department heads and deans that funnel Northern's best and brightest into the city's growing economy.

"When you look at the value of Northern, and why it's important to Aberdeen, it goes beyond economic impact. We don't have a town or an economy at all without Northern grads coming to work for us — whether that's at a local restaurant in town or owning and managing a business. Thirty-four percent of my company's employees have a degree from Northern. That's pretty impressive."

Matt Campbell, President and CEO, MyPlace Hotels

Transformative Research in South Dakota

South Dakota relies upon higher education to provide training and skills for the next wave of discovery in the state. Through cutting-edge healthcare, cybersecurity, and environmental research, as well as driving innovation fueled by the demands of South Dakota's agricultural industry, the public higher education sector is reimagining the state's future while enriching its traditional industries.

In FY 19, the universities expended \$106 million on research-related activities, with \$95.4 million being expended in the state. The **impact of research totaled \$168.5 million**, **supported 974 jobs**, and **generated \$3.6 million in state and local taxes**. With over \$86 million brought into South Dakota from outside of the state, research represents a net new influx of dollars to the economy.

\$86.2 MILLION IN FEDERAL AWARDS (INCLUDES \$17.1 MILLION FROM THE NIH AND \$16.2 MILLION FROM NSF.)	\$17.4 MILLION IN STATE AWARDS	\$3.2 MILLION IN PRIVATE AWARDS	\$6.8 MILLION IN OTHER AWARDS
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All Universities State and Local Tax Impacts (FY 19)

Research commercialization from the South Dakota School of Mines & Technology, South Dakota State University, and the University of South Dakota for FY17 through FY21 is shown in the table below.

	EMPLOYMENT (JOBS)	ECONOMIC OUTPUT	STATE & LOCAL TAX IMPACT
DIRECT	517	\$95,413,490	\$1,117,578
INDIRECT	245	\$41,018,437	\$997,729
INDUCED	212	\$32,090,113	\$1,453,999
TOTAL	974	\$168,522,040	\$3,569,306

Source: SDBOR with analysis by Parker Philips, Inc.

Research Commercialization Activity

	PATENTS FILED	PATENTS ISSUED	LICENSE AGREEMENTS SIGNED	LICENSE AGREEMENTS SIGNED WITH START-UPS	INVENTION DISCLOSURES COMING FROM RESEARCH
FY 17	25	11	9	6	77
FY 18	26	14	12	3	44
FY 19	17	7	5	1	38
FY 20	17	16	6	3	39
FY 21	21	9	9	5	34
	Source: SDBOR				

Case Study:

PREPARING SOUTH DAKOTA FOR A FUTURE YET TO BE IMAGINED

South Dakota's future is bright. With a wealth of talent and a bedrock foundation of agriculture, the state is strengthening those economic sectors and fueling the growth of emerging economic drivers with the new discoveries, innovation, abundant talent, and entrepreneurial excellence that South Dakota's state university system provides. South Dakota university faculty and researchers have received more than \$17 million in federal NSF and NIH grants in 2019 and been granted 17 patents for their cutting-edge ideas and inventions.

A case in point is the South Dakota Mines' Entrepreneur-in-Residence (EIR) program, which provides experienced mentors to coach university business start-ups. EIR's proven track record of success is well-known. As evidence of the success of the program, South Dakota Mines' start-ups have won the South Dakota Governor's Giant Vision Competition in three out of the past four years. In 2021, EIR lists nearly 30 local business leaders serving as mentors with expertise ranging from building and growing start-ups to healthcare management, digital strategy development, marketing, supply chains, and software and product development.

Craig Arnold is one of those EIR mentors. Arnold's leadership experience spans more than 30 years, including technology start-ups, biotechnology, and biofuels, as well as leadership positions in philanthropy, computer technology, and the aerospace industry.

According to Arnold, EIR gives future entrepreneurs "the opportunity to sit with a bunch of us old-timers and tell us a story about their great idea. And we can help them figure out how to launch — how to turn that idea into a new venture. Students need to know what they are paying all this money for and how to get their return on investment. The EIR program helps make sure they get that return."

Craig Arnold, South Dakota Entrepreneur





Conclusion

South Dakota's public higher education institutions are essential to the state's success from a workforce perspective. With the South Dakota Board of Regents at the helm, the system is adapting to the changing demographic, financial, and workforce needs of the state. Each university is an integral part of the higher education delivery system in South Dakota – they are vital to their individual communities and to the students they serve. There is little doubt that these universities understand how to best serve the needs of their students and the people of South Dakota. The impact of these institutions goes beyond economics – they are a part of the social fabric of the state.



Appendix A: Terms & Definitions

Study Year	FY 2019
Dollar Year	Presented in 2019 dollars
Total Economic Output/ Economic Impact	Includes organizational spending on operations, capital expenditures, labor income expenditures, and value added to the economy as a result of expenditures made by an organization. It is the combined impact of direct, indirect, and induced impacts.
Direct Economic Impact	All direct expenditures made by an organization due to its operating expenditures. These include operating expenditures, capital expenditures, and pay and benefits expenditures.
Indirect Economic Impact	The indirect impact includes the impact of local industries buying goods and services from other local industries. The cycle of spending works its way backward through the supply chain until all money is spent outside of the local economy, either through imports or by payments to value added (multiplier effect).
Induced Economic Impact	The response by an economy to an initial change (direct effect) that occurs through re-spending of income received by a component of value added. IMPLAN's default multiplier recognizes that labor income (employee compensation and proprietor income components of value added) is not lost to the regional economy. This money is recirculated through household spending patterns causing further local economic activity (multiplier effect).
Multiplier Effect	The multiplier effect is the additional economic impact created as a result of the organization's direct economic impact. Local companies that provide goods and services to an organization increase their purchasing by creating a multiplier (indirect/supply-chain impacts). Household spending generated by employees of the organization and the organization's suppliers create a third wave of multiplier impact (induced/household-spending impacts).
Government Revenue/ State and Local Tax Impact	Government revenue or tax revenue that is collected by governmental units at the state and local levels in addition to those paid directly by an organization. This impact includes taxes paid directly by the organization itself, employees of the organization, and vendors who sell products to the organization and at the household level.
Direct Employment	Total number of employees, both full-time and part-time, at the organization based on total jobs, not FTEs.
Indirect Employment	Additional jobs created as a result of an organization's economic impact. Local companies or vendors that provide goods and services to an organization increase their number of employees as purchasing increases, thus creating an employment multiplier.
Induced Employment	Additional jobs created as a result of household spending by employees of an organization and the employees of vendors. This is another wave of the employment multiplier.



Source: Parker Philips using IMPLAN with data from SDBOR

Appendix C: Data & Methods

Data used to complete the contribution analysis was provided by the South Dakota Board of Regents and the university. Data supplied included operating expenditures, capital spending, pay and benefits, and total employees. Primary and secondary data was used to complete the input-output models in IMPLAN. The study approach and economic-impact findings are a conservative estimate of impact and are based on actual financial information. The study is a snapshot of the economic impact of the university.

OVERVIEW AND THE IMPLAN MODEL

The most common and widely accepted methodology for measuring the economic impacts of economic sectors is input-output (I-O) analysis. At its core, an I-O analysis is a table that records the flow of resources to and from companies/organizations and individuals within a region at a given time. For a specified region such as a state of the nation, the input-output table accounts for all dollar flows among different sectors of the economy in a given period. With this information, a model can then follow how a dollar added into one sector is spent and re-spent in other sectors of the economy, generating outgoing ripples of subsequent economic activity. This chain of economic activity generated by one event is called the "economic multiplier" effect.

The primary tool used in the performance of this study is the I-O model and dataset developed and maintained by IMPLAN Group LLC (formerly Minnesota IMPLAN Group Inc.). IMPLAN is a widely accepted and used software model first developed by the U.S. Forest Service in 1972. Data used in the baseline IMPLAN model and data set come largely from federal-government databases. The input-output tables themselves come from the Bureau of Economic Analysis. Much of the annual data on labor, wages, final demand, and other market data comes from the Bureau of Labor Statistics, the U.S. Census Bureau, and other government sources.

Government agencies, companies, and researchers use IMPLAN to estimate the economic activities associated with spending in a particular industry or on a particular project. The IMPLAN model extends conventional I-O modeling to include the economic relationships among government, industry, and household sectors, allowing IMPLAN to model transfer payments such as taxes. Producers of goods and services must secure labor, raw materials, and other services to produce their product.

The resources transferred to the owners of that labor or those raw materials and services are then spent to secure additional goods and services or inputs to the products they sell. For example, an organization in a region may develop a company that produces tractors with a value of \$1 million. However, to produce that product, they may be required to spend \$500,000 in wages and benefits, \$200,000 to suppliers of tractor parts, \$100,000 for electricity, \$50,000 for transportation of goods and raw materials to and from the plant, and \$50,000 in various professional services associated with operating a business (e.g., attorneys and accountants). The suppliers will, in turn, spend those resources on labor and raw materials necessary to produce tractors. Workers and the owners of the company will buy goods and services from other firms in the area (e.g., restaurants and gas stations) and pay taxes. The suppliers, employees, and owners of this second tier will, in turn, spend those resources on other goods and services whether within the study region or elsewhere. The cycle continues until all of the money leaves the region.

IMPLAN METHODOLOGY

The model uses national production functions for over 536 industries to determine how an industry spends its operating receipts to produce its commodities. These production functions are derived from U.S. Census Bureau data. IMPLAN couples the national production functions with a variety of county-level economic data to determine the impacts at a state and congressional-district level. IMPLAN collects data from a variety of economic data sources to generate average output, employment, and productivity for each industry in a given county. IMPLAN combines this data to generate a series of economic multipliers for the study area. The multiplier measures the amount of total economic activity generated by a specific industry's spending an additional dollar in the study area. Based on these multipliers, IMPLAN generates a series of tables to show the economic event's direct, indirect, and induced impacts to gross receipts, or output, within each of the model's more than 536 industries.

The model calculates three types of effects: direct, indirect, and induced. The economic impact is the sum of these three effects.

CONSIDERATIONS CONCERNING IMPLAN

There are three important points about the use of IMPLAN (or any other input-output model):

It is a fixed-price model. The model assumes that changes in consumption are not limited by capacity and do not affect prices. This assumption does not cause a problem for the analysis presented here because we are taking a snapshot of South Dakota in a specific year.

As in many studies using this type of model, the direct impacts are not calculated by the model; they are a reflection of actual spending levels and patterns created by South Dakota. Changing the level of direct spending allows us to calculate the magnitude of the indirect and induced effects associated with the initial level of spending.

Because the model continues to calculate additional spending until all of the money leaves the region (i.e., "leakage"), the larger and more economically diverse the region, the longer it will take for spending to leave the region and the larger the impact is likely to be. For example, employees of South Dakota may spend some amount of their income on buying a car. If there are no car manufacturers in their state or county, this spending will leave the region and the multiplier effect will stop. At the national level, some portion of that same spending by that same individual may go to a national auto producer. That spending would lead to more spending at the national level than would be captured by a more regional model. The national impact will be larger than the sum in the individual states, and the individual state impact will be larger than the sum of the impacts in its congressional districts.

Appendix D: FAQ's

WHAT IS AN ECONOMIC-CONTRIBUTION ANALYSIS?

Technically, this study is a contribution analysis. The study quantifies the economic contribution of the university in terms of economic impact, jobs, and local and state tax revenue. The study calculates how spending by employees, visitors, and students contributes to the economy of South Dakota and beyond. It examines how expenditures create additional impact in the economy directly and through the multiplier.

For the purposes of this study, an economic contribution is defined as the gross changes in South Dakota's existing economy that can be attributed to the universities. Contribution analysis is a descriptive analysis that tracks gross economic activity: how spending by the university and its constituencies cycles dollars through the economy. The university's economic-contribution analysis does not consider how spending at this university may crowd out spending at another college or university within the state. This type of analysis is one of the most common that is performed and is often mislabeled as an economic-impact study. Please note that while the terms used to express the contribution of South Dakota to the statewide economy are referred to as economic impact, this is a contribution analysis.

Spending by students, staff, and faculty who are explicitly participating in activities associated with South Dakota's output represents a "stemming-from effect" and could also be considered a direct effect of the higher-education industry. For example, a student who attends classes and spends \$10 on lunch at a local restaurant is a stemming-from effect of the university. This contribution analysis then follows the direct economic activity and associated stemming-from effects through the economy, with the output of each sector broken down and attributed to expenditures on intermediate inputs or to value-added components such as labor, taxes, and returns to capital. Output multipliers, which are sector- and region-specific, are derived from the appropriate model and relate an industry's economic activity (or changes in the industry's economic activity) to gross sales in the other sectors of the regional economy.

The contribution analysis does not account for the fact that if a student attending class were a local resident, then the \$10 they spent on lunch potentially represents \$10 they are not spending at another restaurant elsewhere in town. The direct effect in a contribution analysis includes purchases by students from in and out of state and is neither a measure of changes to the state's economic base nor a measure of the value added to the region above what was paid to input suppliers.

WHAT SHOULD YOU REMEMBER ABOUT THE STUDY WHEN YOU READ IT?

- It is a point-in-time calculation of impact for FY 19.
- It quantifies the amount of impact that the universities produce each year.
- The economic numbers can fluctuate from year to year based on operational spending, capital spending, pay and benefits, number of employees, number of students, and state appropriation.
- This is an economic-contribution analysis that casts a broader net to calculate impact than an economic-impact study.
- These are conservative numbers and adhere to industry-respected protocols.

WHAT METHODOLOGY WAS USED TO COMPLETE THIS STUDY?

IMPLAN data and software were used to conduct this economic-contribution analysis. The IMPLAN database is built using county, state, ZIP code, and federal economic statistics that are specialized by region, not estimated from national averages, to measure the contribution or impact of an organization's economic activity.

WHAT WERE THE MULTIPLIERS FOR THIS STUDY?

The multipliers used in this study range from 1.8 to 2.1. The multipliers are derived through the input-output models created using the IMPLAN software based upon industries selected during the modeling process.

WHAT DATA DOES THIS STUDY USE TO CALCULTE THE ECONOMIC IMPACT?

Primary data used in this analysis is for FY 19 and was obtained from the South Dakota Board of Regents and the university.

Data addresses the following subjects:

- Operating expenditures.
- · Capital expenditures.
- Pay and benefits by employee type.
- Number and types of students (all in-state and out-of-state students included).
- Athletics.
- Volunteerism.
- · Charitable giving.
- Alumni data.

Secondary data was used to estimate the following:

- Student spending habits based on the universities' budgets for spending (full- and part-time undergraduate and graduate students, excluding tuition and fees).
- Visitor numbers and visitor spending habits (day and overnight visitors).

WHAT ARE THE COMMUNITY-BENEFIT IMPACTS BASED UPON?

Charitable-giving impacts are based upon assumptions found in the U.S. Census donor data. These models do not assume a 100% participation rate for staff, faculty, and students and are not based on averages. Some colleges and universities had primary data available on volunteerism, and in those cases actual hours were used in the calculation. For the purposes of this study, it is assumed that 24.9% of staff and faculty donate an average of \$2,064 annually and 14.9% of students donate an average of \$250 each year.

Volunteer impacts are based upon assumptions found in the U.S. Census, and the value of a volunteer hour was obtained from the Points of Light Foundation and is estimated at \$23.56 per hour.

WHY DID THE SDBOR COMMISSION A STUDY?

The SDBOR commissioned the analysis to quantify the impact of all six public higher education institutions in its system. SDBOR and the university have a number of helpful tools to explain the value proposition for supporting higher education; this independent study is one way to help explain its worth. In trying to explain the value of South Dakota public higher education to internal and external constituents, it is important to quantify the workforce and economic gains realized throughout the state. There are many ways to view the impact and value of a university and university system – economic impact is one.

WHY DOES THIS STUDY LOOK DIFFERENT FROM OTHERS WE HAVE SEEN PUBLISHED?

The veracity of the data and methodology are consistent with industry-standard protocols for conducting an effective economic-impact study that is conservative. The data is an independent assessment of the university's contribution to the overall economy – the numbers drive the message, not the other way around. The report is designed to make the data analysis accessible to all readers.







Get in touch now

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