south dakota biotech

20 YEARS OF PROGRESS

THE NEXT 20 YEARS OF POSSIBILITY

2006 – 2026

EXPANDING RESEARCH | ADVOCACY | FUNDING | EDUCATION | INFRASTRUCTURE DEVELOPMENT | PROMOTION





SOUTH DAKOTA BIOTECH

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THE NEXT 20 YEARS OF POSSIBILITY

2006 – 2026

Twenty years ago, South Dakota's bioscience community was little more than a bold idea shared by a handful of visionaries who believed the state could be more than a participant in the future of biotechnology — South Dakota could help shape it.

Today, as South Dakota Biotech marks its 20th anniversary, that belief has become a thriving reality. What began as a small coalition has grown into a statewide and increasingly regional force for innovation, economic growth, and scientific leadership.

This milestone is more than a celebration of years. It is a celebration of people, progress, and the power of a shared mission.

2006

South Dakota Biotech forms as the statewide biotech industry association (BIO state affiliate)

South Dakota Mines and SDSU partner to establish the Center for Bioprocessing Research and Development, expanding research and innovation in plant-derived materials and new bioproducts



2007

Development begins on SDSU Research Park, creating a hub for research, innovation, and commercialization



Homestake Gold Mine transitioned into a dedicated underground research facility: Sanford Underground Research Facility (SURF)

2008

SDSU Research Park Innovation Center (BIC) in Brookings opens



THE BEGINNING:
A VISION TAKES ROOT

In 2006, South Dakota's bioscience landscape was emerging but fragmented. Researchers, entrepreneurs, and industry leaders were doing impressive work, yet the state lacked a unified voice — an organization that could champion the sector, advocate for smart policy, and connect innovators across disciplines and geographies.

South Dakota Biotech was created to fill that gap.

The founding board understood that biotechnology would become one of the defining industries of the 21st century. They also understood that South Dakota had unique strengths — agriculture, research universities, manufacturing capacity, a commitment to cutting-edge healthcare, and a culture of collaboration — that positioned the state to lead.

Their early work laid the foundation for what would become a dynamic, resilient, and nationally recognized bioscience ecosystem.

FROM THE **FOUNDERS**



"I remember going to the first international BIO conference in Boston in 2007 with a small group. It has been great to see how the organization has grown in terms of membership but also how it supports the industry in South Dakota. South Dakota Biotech has continued to add services supporting well-established biotech organizations as well as startup companies."

MEL USTAD
Past president, South Dakota Biotech

Former director of research and commercialization
South Dakota Governor's Office of Economic Development



"The opportunity just seemed ripe for us to have an association where biology and technology could come together in a way that we could promote that science-based economy. The decision was made that we needed to organize in such a way that we could bring not only companies together, but also bring the universities, STEM education, and everything else into more focus.

And that's exactly why South Dakota Biotech was founded."

EDDIE SULLIVAN
Co-founder, South Dakota Biotech

Co-founder and president
SAB BIO

FOUNDING FATHER

In 2006, Eddie Sullivan was chief operating officer of Hematech, a Sioux Falls subsidiary of the pharmaceutical division of Kirin in Japan.

Tasked with ensuring that a transgenic animal platform for producing human medicines would have a path to approval at the FDA, he became involved with the international BIO organization in Washington, D.C., became chairman of the Animal Biotech Committee, and later was appointed to the board of directors.

"I saw a great opportunity for biotech development in South Dakota as Hematech was developing this platform technology," he said.

Sullivan became an original founder of South Dakota Biotech in 2006.

"Knowing the great potential of South Dakota in biomedical, agriculture, and industrial and environmental biotechnology, the time had come to bring like-minded groups together to coordinate a biosciences ecosystem in the state of South Dakota," he said.

"We traveled the state to find those that were interested and immediately started interacting with the governor and state legislators on biotech. We also had opportunity to collaborate with established organizations like the EpSCOR REACH Committee and Research Commercialization Council in South Dakota."

SAB's technology was acquired by Sanford Research in 2012, which eventually led to founding and spinning out SAB Biotherapetics in 2014. The company has focused on clinical development of multispecific, targeted fully human antibodies since that time. SAB became a publicly traded company in 2022 and now is in a pivotal clinical trial for Type 1 diabetes.

"South Dakota Biotech has been a great resource as SAB BIO has continued to grow and develop its research and development in South Dakota," Sullivan said.

"The benefits program for laboratory supplies and equipment has been of great benefit, and the efforts of SD BIO in connecting private industry, state and local governments, and university research programs have been amazing. From small and humble beginnings, SD BIO has grown into a valuable resource for our company and others in the state of South Dakota."

2009

- SURF's 4850 Level dedicated, marking major operational infrastructure milestone
- Seed and plant innovation facilities expand at SDSU Research Park

2010

- South Dakota expands its Governor's Research Centers program to accelerate university research, commercialization, and high-tech job creatiom

2013

- The USD Research Park Corporation was established, laying the foundation for today's USD Discovery District

2014

- South Dakota Biotech presents its inaugural LIVE Award to Eddie Sullivan



2015

- The Build Dakota Scholarship launches with a $25 million private gift matched by $25 million from the Future Fund

LEADERSHIP **PERSPECTIVE**

JONI EKSTRUM
executive director, South Dakota Biotech

I remember when South Dakota Biotech was still trying to explain why an organization like this mattered. There were great researchers, great companies and people with big ideas, but there weren't nearly as many ways for them to find each other.

That has changed. Over the years, I've watched a real community take shape. A conversation at the Summit turns into a collaboration. A researcher gets connected with a company. An entrepreneur finds someone who can help move an idea forward. A policymaker gets a better understanding of why research and biotechnology matter to South Dakota's economy. Those connections may not always make the headlines, but they are a big part of how an industry grows.

What makes me proud is that we've never tried to make South Dakota Biotech the center of the story. Our job is to help the people doing the work succeed and make sure South Dakota is a place where innovation has a chance to grow.

The last 20 years were about building the ecosystem. The next 20 will be about seeing what South Dakota can do with it.

SOUTH DAKOTA BIOTECH
BY THE NUMBERS

MEMBER ORGANIZATIONS

2006	2026
7	70

SOUTH DAKOTA BIOSCIENCES
THEN & NOW

BIOSCIENCE WORKERS

2006	2026
4850	8646+

BIOSCIENCE ESTABLISHMENTS

2006	2026
312	995+

Source; GOED

FROM DISCOVERY TO DELIVERY: SOUTH DAKOTA'S HEALTH INNOVATION JOURNEY



The mid-2000s were something of an inflection point in South Dakota's healthcare field.

In 2006, Sanford Research came under the control of Sanford Health, creating a dedicated research enterprise embedded within a large integrated health system.

Today, Sanford Research has more than 250 researchers working in areas such as cancer biology and immunotherapies, cellular therapies and stem-cell biology, diabetes, genetics and genomics, pediatrics, and rare diseases.

"I remember South Dakota Biotech's startup being part of an exciting time for the research and biotechnology agenda in South Dakota," said John Paulson, former Sanford Health executive and longtime South Dakota Biotech board member.

"The state was looking to even further improve its business climate and recruiting potential, core and novel businesses were innovating and evolving, the medical community was expanding its capacity for doing advanced clinical treatments and sophisticated research, and universities were building on their research potential. In 2007, Sanford Health received an incredible $400 million gift from Denny Sanford to transform healthcare throughout the region."

In 2006, Avera Health was just six years into its new structure as a combined health ministry after the Benedictine and Presentation health systems unified.

"Avera McKennan Hospital & University Health Center specifically was much smaller in scale and scope, averaging about half the number of inpatients compared to today – and our genetics lab was just getting started," said Thomas Johnson, vice president of diagnostic and therapeutic services at Avera Health.

2019



SD FAST Launch begins under South Dakota Biotech

NSF awards South Dakota a $20 million EPSCoR Track-1 grant to enhance research capacity and talent development

2020

Dakota State University announces Paulson Cyber Incubator & Entrepreneurial Center

Build Dakota Scholarship renewed, five-year investment extending South Dakota's technical workforce pipeline

Nanopareil acquisition announced that highlights South Dakota's success in bringing deep-tech innovations to market

2021

SDSU Research Park bioprocessing facility planning ramps (precursor to POET Bioproducts Center)

South Dakota Biotechnology Council (dba BioRise) receives a $600,000 SBA FAST grant to support technology-based entrepreneurs statewide

"Steve Statz was an original board member with South Dakota Biotech from Avera and worked tirelessly to help grow and guide the organization."

Both major health systems have expanded access to areas such as genomic oncology, immunotherapy, clinical trials, and cellular therapy.

"South Dakota Biotech has been a great networking opportunity for our Ph.D. scientists to connect and collaborate with others in the industry," Johnson said.

"Having local connections with people doing similar work is very important to their professional development and job satisfaction. The association has also advanced many scientists and startup companies through grants and bringing additional monetary support to South Dakota."

South Dakota Biotech's affiliation with the international BIO organization and its ability to engage a broad spectrum of industry stakeholders have been key to its success, Paulson said.

"South Dakota Biotech has matured during the past 20 years with the capability to serve the South Dakota biotechnology industry and its members with a group of advocacy, educational, and operational support services," he said.

"From its cost-savings programs and services for members to its annual summit that draws hundreds of industry leaders, South Dakota Biotech has gone far in 20 years."

The evolution of biotechnology research also has been evident at the University of South Dakota and South Dakota Mines, where investments in specialized facilities, research programs, and industry partnerships have helped move scientific discoveries closer to commercial applications.

At USD, the Sanford School of Medicine launched a combined M.D./Ph.D. program in 2006 to train physician-scientists, while research expanded into areas such as regenerative medicine, biomedical engineering, and technologies designed to improve patient care.

A major milestone came in 2009 with the opening of the Graduate Education and Applied Research Center in Sioux Falls, creating a collaborative environment for university researchers and private businesses. The center has supported research into medical devices, tissue engineering, drug-delivery systems, and other biomedical technologies.

That emphasis on connecting research with industry has continued with the USD Discovery District, which opened its first 50,000-square-foot research and laboratory building in 2025. The district is designed to help emerging and established bioscience businesses access specialized facilities and university research expertise.

HEALTH/MEDICAL EMPLOYMENT
BY THE NUMBERS

2006	2026
51K	74K

HEALTH CARE ESTABLISHMENTS

2,255	3,254

Source: QCEW

"The challenge is to increase South Dakota's scale. More research spending, more PhD students, the more research outputs, the more research derived outcomes moving to successful commercialization the more growth in the South Dakota bioeconomy. South Dakota Biotech, along with their members, is positioned to give needed leadership to building a better South Dakota through its bioeconomy."

DAVID CHICOINE
Professor emeritus of economics
and president emeritus
South Dakota State University



A 'GREEN' BIOTECH ECONOMY TAKES ROOT

South Dakota's longtime No. 1 industry – agriculture – consistently helps drive one of its newer ones: biotechnology.

South Dakota already had a deep agricultural research tradition, but over the past 20 years, it has layered genomics, gene editing, advanced breeding, data science, precision agriculture, and bioprocessing onto that foundation.

In 2007, the year after South Dakota Biotech was founded, David Chicoine returned to South Dakota after three decades at the University of Illinois to lead South Dakota State University and began speaking regularly about the role of university research, biotech innovation, and related economic impacts.

2022



Dakota State University receives SBA Cybersecurity Grant: funding expands cybersecurity support for South Dakota small businesses



Northern State University wins EDA Build to Scale (Venture Challenge) for Northern Innovation Startup Center



South Dakota State University modernizes its biotechnology program to strengthen workforce and industry alignment

NSF awards $14 million over five years to launch the Great Plains I-Corps Hub, led by North Dakota State University with SDSU, USD, Dakota State, and South Dakota Mines as founding partners



Dakota State University establishes the Applied Research Corporation (DARC) to expand applied research, commercialization, and industry partnerships

"There was a great deal of interest and determined focus to grow the biotech economy," he said. "From 2006 to 2026, there has been a sea change with great upside promise, and South Dakota Biotech has become the industry organization in the state partnering across the public, university, and private sectors."

Kevin Kephart, former vice president for research and economic development at SDSU, was among the early leaders involved in conversations that led to the formation of South Dakota Biotech.

At the time, Kephart already was connected to the national biotechnology community through his work at SDSU, particularly the Sun Grant Initiative, a land-grant university network focused on advancing a rural, biobased economy.

"SDSU has had strength as an ag research university, in keeping with it being a land-grant institution," Kephart said. "But in the 20 years since the formation of South Dakota Biotech, SDSU became noticeably more collaborative with industry and other South Dakota Board of Regents institutions."

Those connections helped create partnerships with health systems, agricultural organizations, and biotech companies, he said, while also contributing to the formation of homegrown companies such as Medgene and Houdek.

"South Dakota Biotech established more interaction that created synergies," Kephart said. "We also put a lot more emphasis on managing innovation and intellectual property."

SDSU's research portfolio has continued to grow in depth and breadth with the addition of several Ph.D. programs.

"There are now 17 Ph.D. degrees offered by SDSU. In 2007, I believe there were maybe two or three," Chicoine said.

At South Dakota Mines, biotechnology research also was receiving significant attention as South Dakota Biotech was forming.

In 2006, the state announced a new Center for Bioprocessing Research and Development at Mines, working with SDSU to develop technologies for converting plant-derived materials into alternatives to petroleum-based products.

Two decades later, that work has evolved into research involving advanced biomaterials, biomedical engineering, regenerative medicine, and biomanufacturing.

One recent example is a partnership between Mines and Dakota BioWorx in Brookings to investigate converting corn harvest leftovers into sophisticated biomaterials with potential medical applications.

Investments in research are key, said Barry Dunn, president of SDSU, adding that they should center on new uses for the crops South Dakota produces abundantly.

"Solving scientific problems by using our corn, soybeans, wheat, and other crops is a prime way to build wealth for South Dakota families," he said.

"The POET Bioproducts Center and the work of Dakota BioWorx are the changemakers. It has the fermenters and other unique equipment necessary to develop new uses for South Dakota commodities. Good research is magnetic to other researchers."

AGRICULTURE + BIOTECH
20 YEARS OF BUILDING CAPACITY

2006

Traditional ag research strength

Limited pilot-scale bioprocessing infrastructure

20 YEARS OF INVESTMENT

2026

$94M SDSU Annual Research Expenditures

45K Square Foot POET Bioproducts Center

3,000L Pilot-Scale Fermentation Capacity at Dakota BioWorx

$32.5M+ Documented Facility/ Equipment Investment



FUELING BIOTECH GROWTH

In the past 20 years, South Dakota has evolved from a major ethanol producer to becoming a center for biofuel production, process innovation, and increasingly diverse bioproducts.

The state roughly tripled the ethanol-production capacity it had at the beginning of 2006 while maintaining its position among the country's leading biofuel states.

Sioux Falls-based POET has served as a driver for the industry, growing into the world's largest producer of biofuel and a global leader in sustainable bioproducts.

In 2006, the company was still known as Broin Companies and was in the midst of a major expansion, designing and building ethanol plants across the Midwest.

2023

- BioRise founded as South Dakota Biotech affiliate/ initiative strengthening the startup pipeline
- South Dakota Mines opens CNAM-Bio, advancing biopolymer, biochemical, and biocomposite research
- POET Bioproducts Center's October 11, 2023, opening and Dakota BioWorx's operating role
- Mount Marty launches the Dakotas' first M.S. in Biotechnology Management, strengthening the state's biotech workforce pipeline

2024



- International biotech firm Cytion selects South Dakota for its U.S. growth and innovation hub
- USD receives $6.5 million to establish South Dakota Biomedical Computation Collaborative
- BioRise receives a $1 million U.S. Small Business Administration FAST Grant to support tech-based entrepreneurs across the state
- Ballard Spahr and SD Biotech launch BioTech Launchpad, with Ballard Spahr committing $300,000 in in-kind legal services over five years to support biotech startups



- NSF awards South Dakota a $7 million EPSCoR E-RISE grant to advance research, workforce, and collaboration

Over the ensuing two decades, advances in biotechnology increasingly have allowed POET to improve what can be produced from each bushel of corn.

The company's research has included developing bioproducts as well as optimizing the yeast and enzymes used in its raw-starch process. Improvements in those areas can increase yields of bioethanol, distillers corn oil, and other products while making the overall bioprocessing operation more efficient.

"The ability to innovate and develop new technologies has never been better," said Jeff Heikes, POET senior vice president of research and president-elect of the South Dakota Biotech Board of Directors.

Advanced computing power and artificial intelligence are accelerating that work, allowing POET and its research partners to screen and evaluate potential biotechnology at a pace that would not have been possible 20 years ago.

"The ability to screen faster has led to exceptional opportunities in bioethanol, distillers corn oil and other bioproduct yields," Heikes said.

For POET, South Dakota Biotech has helped connect that work with a broader community of researchers, businesses, and universities.

"South Dakota Biotech supports POET by facilitating those connections to an audience outside of bioethanol," Heikes said. "Academia, startups, and large industrials are connected through South Dakota Biotech in a manner which benefits the state."

Advocacy has been key as well, he added.

"By keeping a pulse on policy and policymakers, South Dakota Biotech can bring common interests to our state and national leaders in a unified way. By engaging policymakers, the members of South Dakota Biotech can be heard as a collective voice," Heikes said.

He anticipates growth both for POET and South Dakota Biotech in the coming years.

"POET's hopes are that biotechnology will continue to expand and new innovations will be commercialized in our state," he said.

"We see South Dakota Biotech continuing to evolve by taking a larger biotech leadership role in the Great Plains. It's a great example of what a state association can do for its members, and we can see South Dakota Biotech connecting with other groups in the surrounding states to make a broader impact."

SOUTH DAKOTA BIOENERGY:
20 YEARS BY THE NUMBERS

	2006	2026
Gallons of Bioethanol Statewide	350M	1.5B
Bushels of Corn Processed	300M	495M
Jobs Supported	15,000	25,205
	$1.5B Economic Input	$2.9B Economic Output

"South Dakota Biotech is an important part of the economic development of the state and region. There are two major approaches to economic development and industry expansion: recruiting new players and growing your own. South Dakota Biotech has a role to play in both of these."

KEVIN KEPHART
Vice president emeritus
research and economic development
South Dakota State University



ANIMAL-RELATED **ADVANCEMENTS**

South Dakota sits at a unique crossroads in the animal-health ecosystem. Livestock production, veterinary science, applied research, and commercialization are woven together tightly, coupled with the state's inherent strength as a pro-business environment.

In 2008, two years after South Dakota Biotech was founded, Mark Luecke received a call from a South Dakota-based group of civic entrepreneurs interested in starting an early-stage venture capital firm focused on research commercialization, which became South Dakota Innovation Partners.

Luecke relocated from Denver and shortly afterward started Houdek, then known as Prairie AquaTech, to biologically process soybean meal into high-quality ingredients for global aquaculture and livestock

2025



South Dakota strengthens its research strategy by updating its Science & Technology Plan to align with NSF EPSCoR priorities



USD Discovery District opens Building 1

South Dakota Mines receives $1.49 million to advance AI-powered biomedical research

2026



South Dakota launches the Defense Institute with a $5 million Future Fund investment to advance defense innovation, workforce, and federal contracting

South Dakota reforms the Governor's Research Centers program to enhance transparency, accountability, and commercialization outcomes

BioMADE announces funding for Dakota BioWorx and South Dakota Biotech to develop and pilot hands-on biomanufacturing workforce training

production, and Medgene to biologically express protein in insect cells for veterinary vaccines.

“Both companies started from an idea that a SDSU professor wrote on a piece of paper called an invention disclosure form,” Luecke said.

“Today, Houdek distributes tens of millions of pounds of ingredients to fish feed producers around the world as the world’s largest ‘alternative protein’ company, and Medgene distributes tens of millions of doses of vaccines to livestock veterinarians around the world as South Dakota’s first and only USDA-licensed vaccine company and the world’s largest ‘platform vaccine’ company.”

South Dakota Biotech “has been absolutely critical to the development of our companies,” Luecke said.

“At first, it was about making connections with others within the regional biotech and entrepreneurial ecosystem, which led us to grant writers, industry consultants, future employees, and strategic partners.

“As our companies matured, it grew to providing significant financial discounts on important purchases that we were making and continue to make. These cost savings are material to our companies. And as we have achieved milestones over the years, South Dakota Biotech has been there with us every step of the way to help us promote our efforts both locally and nationally.”

ANIMAL HEALTH: 20 YEARS BY THE NUMBERS

2006

- Veterinary Biotech Research Centered Primarily at South Dakota State University
- Fewer Than **10** Dedicated Animal Health Biotechnology Companies
- Commercialization Just Beginning

2026

- **100+** Medgene Employees
- **TENS OF MILLIONS** Vaccine Doses Distributed Worldwide
- Vaccines Serving Swine, Cattle, Deer, And Companion Animals
- South Dakota Companies Developing Next-Generation Vaccines and Diagnostics for Producers Around The World

FROM THE **FOUNDERS**

“I believe, 22 years ago, that South Dakota was a land of opportunity in so many ways. And I think what I have seen is a continued growth in the sophistication of what we’re doing here in the state. But the opportunities have not shrunk. They have only increased. And I think that’s because organizations like South Dakota Biotech and the companies that are being built here have continued to want to be here in South Dakota. To be recognized across not only the country, but across the globe as innovators right here within the state of South Dakota.”

EDDIE SULLIVAN



FUTURE-FOCUSED: WHAT COULD THE NEXT 20 YEARS BRING?

The pace of change likely will only accelerate as South Dakota Biotech looks toward its next 20 years.

But a solid foundation combined with emerging talent and technologies are positioning the state and the association for growth.

“I would love to see South Dakota become known not only as a place where great biotechnology research happens, but as a place where discoveries become companies, companies scale, and talented people choose to build their careers,” said Ashley Podhradsky, vice president of research and development at Dakota State University and a South Dakota Biotech board member.

“The greatest opportunity, in my view, is at the intersection of disciplines, biotechnology combined with AI, advanced computing, cybersecurity, agriculture, and healthcare. The biggest innovations over the next 20 years probably won’t fit neatly into one traditional industry.”

At SDSU, the university’s pursuit of Research 1 status is already attracting scientists who are on the verge of replacing red dye No. 3 and bioplastics made from South Dakota crops.

“We’re printing human corneas from pork co-products and developing microneedle bandages that apply cancer treatments directly to the skin,” President Dunn said.

“The possibilities will only multiply when we reach R1 status. We expend more than $80 million a year on SDSU research, and we’re solving practical problems.”

The advocacy by South Dakota Biotech positions SDSU for R1 success, he added.

“Joni and team have been an effective voice talking in the ears of the governors, lawmakers, and even the Board of Regents over the last two decades. South Dakota Biotech tells an excellent story, and SDSU is proud to produce the real-world results demonstrating the value of innovation.”

No matter what change is ahead, South Dakota Biotech has a critical role to play.

“South Dakota Biotech has helped create connective tissue across that ecosystem. It has given the industry a collective voice while creating opportunities for companies, researchers, students, investors, and policymakers to find one another,” Podhradsky said.

“It needs to keep being the convener but continue pushing toward action. Bring together people who would not normally be in the same room. Help companies connect with university researchers and talent. Help researchers understand industry problems. Help students see that they can build careers in these fields without leaving South Dakota.”

Eddie Sullivan, whose leadership and vision helped launch the industry and the association in South Dakota, envisions continued growth both from well-established companies as well as new startups in the next 20 years.

“South Dakota will continue to grow and develop its research and development culture in the three areas of biotech, biomedical, agricultural and particular biofuels,” he predicted.

“South Dakota BIO will continue to find new ways to connect and develop entrepreneurship in the state of South Dakota and connecting workforce development and innovation in state and private colleges and universities with the needs of growing businesses in the state over the next 20 years.”



south dakota biotech

Connect. Collaborate. Innovate.

PROGRESS >> POSSIBILITY >> PROGRESS >> POSSIBILITY >> PROGRESS >> POSSIBILITY >>

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