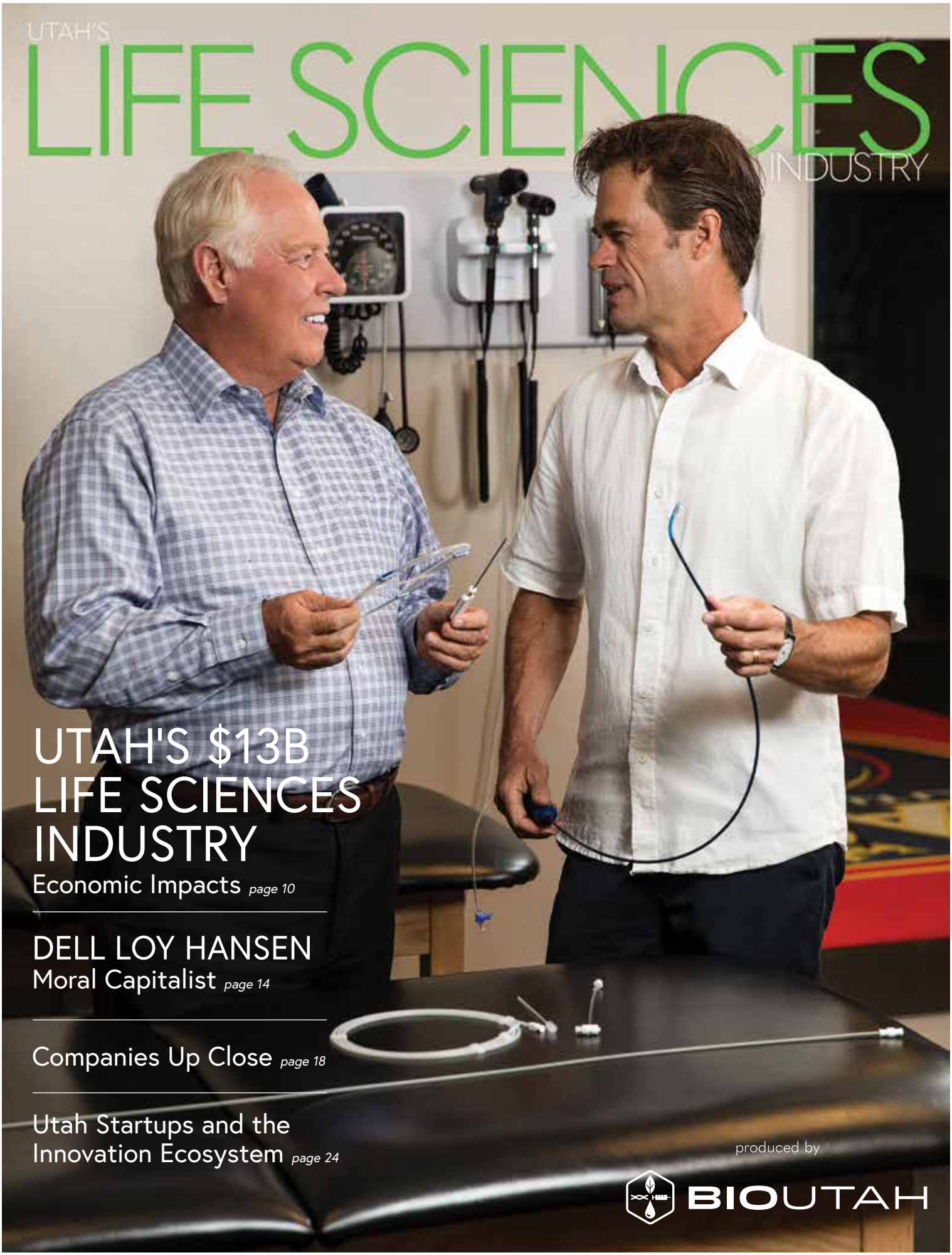
UTAH'S

LIFE SCIENCES INDUSTRY



UTAH'S $13B LIFE SCIENCES INDUSTRY

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Congratulations on being #1 in job growth!

Fastest 5-year growth among top 20 states in life sciences employment

WELCOME TO UTAH'S LIFE SCIENCES INDUSTRY

Dear Readers,

Welcome to *Utah Life Sciences Magazine,* the first in a series of special publications that take an in-depth look at the state's life sciences industry. This special series will educate the reader about the economic contribution, companies, products, leaders, innovators, investors, partnerships, and workforce that define this dynamic industry and extended ecosystem. Utah's life sciences mission is to deliver life-changing medical technologies, diagnostics, and therapies to advance health and wellness.

Our feature story provides a detailed report on a new study, the Economic Impacts of Utah's Life Sciences Industry, recently released by the University of Utah's Kem C. Gardner Policy Institute. According to the study, the industry, with strengths in medical technologies, advanced diagnostics, biotechnology, pharmaceuticals, and healthcare IT, supported over 130,000 jobs in 2017 and created $13 billion in state GDP. Clearly, this sector is a powerful driver of the state's economy.

On the cover is Dell Loy Hansen, entrepreneur and owner of Real Salt Lake. He is pictured with innovator Jay Muse, President and CEO at Talon Surgical, displaying new cutting-edge technologies to treat heart disease. Dell Loy has a passion for investing in the life sciences. We tell his story about working with Mr. Muse and other technology builders in MedVenture Holdings to bring novel medical devices to market. Utah life sciences executives provide unique insight into the scope and diversity of our life sciences landscape. We also shed light on key issues, such as workforce development.

Whether you're an industry insider or just getting to know the life sciences community, we invite you to turn the page and learn more about who we are and the exciting things we're doing every day, right here in Utah, to improve and save lives worldwide.

Sincerely,

Richard Ji
VP of Operations, Clinical Innovations
Chairman, BioUtah Board of Directors

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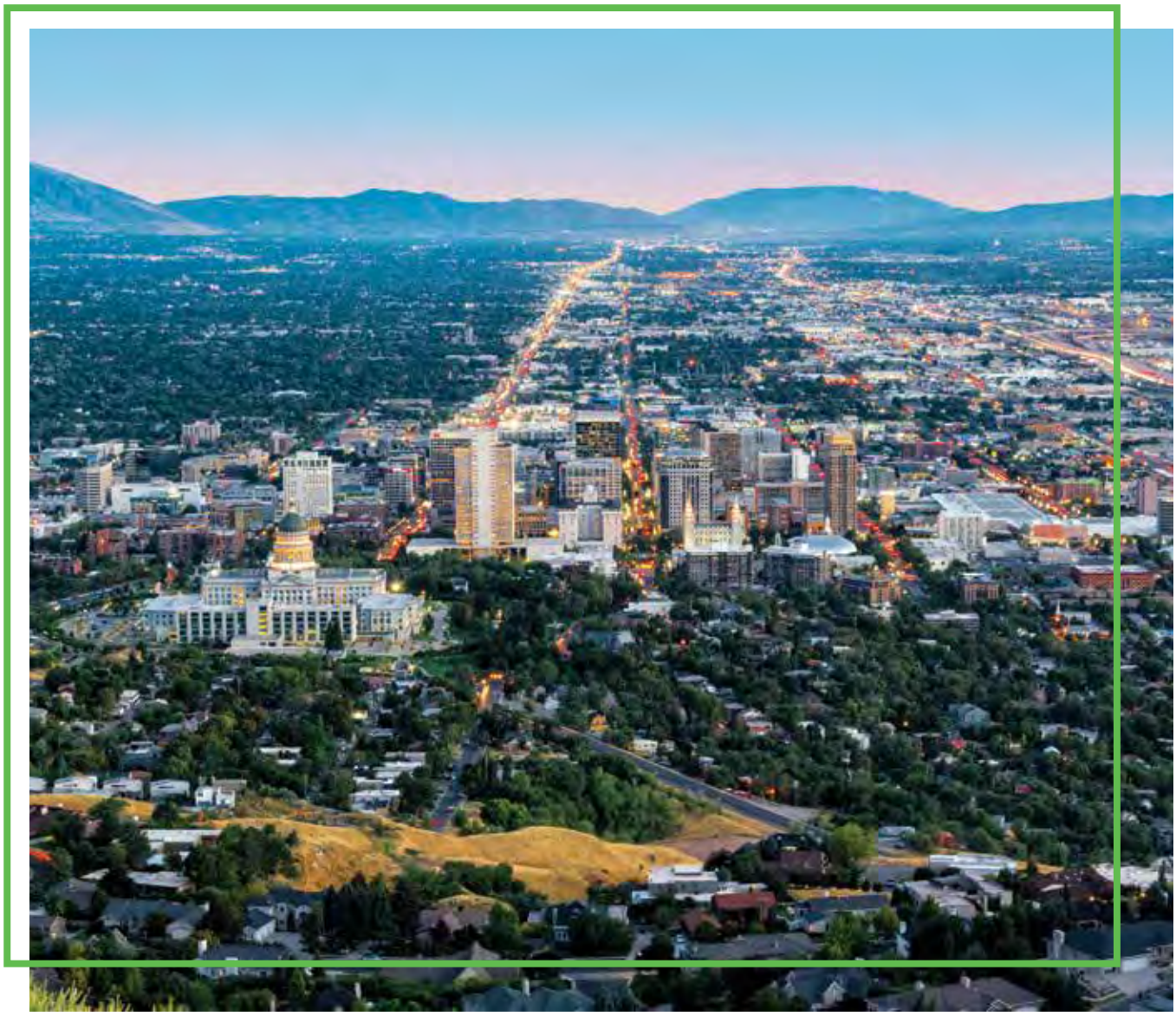


Utah's Vibrant Life Sciences Landscape

Denise Bell | Director, Medical Innovations Pathways | BioUtah

"The industry has great potential. It's been rewarding to see so many of the state's life sciences companies succeed and help patients. But innovation isn't easy."

— Dinesh Patel, managing director and founder of Patel Family Investments

When you think of medical technology, genomics, or biotechnology, Utah might not be the first place to come to mind—but Utah has a rich tradition of innovation (see chart) dating back to the William J. Kolff artificial kidney in 1967 and the Jarvik artificial heart in 1973. Today, with strengths in medical technology, diagnostics, biotechnology, and pharmaceuticals, the state's life sciences industry is one of the fastest growing in the nation. In fact, from 2012 - 2017, Utah had the highest job growth among states with large life sciences sectors. During those same years, life sciences employment in the state grew by an impressive 25.4 percent.

Life sciences is one of the state's six strategic economic clusters, providing diverse products and services such as catheters, heart valves, genetic testing for breast cancer, stroke care technology, cancer therapies, rare disease drugs, and medical imaging components. These companies are constantly innovating to improve and save lives. "We are at the forefront of some of the world's best medical technologies and groundbreaking therapies," Gov. Gary Herbert said in BioUtah's 2018 Utah Life Sciences Industry Report.

The success of the industry, however, does not come without its challenges. For instance, access to capital is often cited as a constraint to expansion. Compared to other sectors, Utah's life sciences companies get a much smaller share of the total dollars invested in the state. They generally face a higher bar in attracting capital due to extensive regulation and the significant cost and risk associated with bringing a new medical device, diagnostic or drug to market.

The industry has great potential," said Dinesh Patel, biotechnology pioneer and managing director and founder of Patel Family Investments. Over the years, I've worn a number of hats in this business. I've been an entrepreneur and venture capitalist. It's been rewarding to see so many of the state's life sciences companies succeed and help patients. But, innovation isn't easy." Patel is optimistic that barriers, such as access to capital, can be addressed. In fact, with the right mix of incentives, public-private partnerships and state support, he believes the industry has even more room to grow and push the boundaries of discovery.

MEDICAL DEVICE MANUFACTURERS

Utah is a global leader in medical device manufacturing, employing 13,760 Utahns in 2017. The vast majority of all arterial and vascular access devices used worldwide are manufactured in Utah. Device companies of all sizes have operations in Utah, including homegrown companies like *Biomerics, Merit Medical, Nelson Laboratories*, and *Varex Imaging (a spin-off of Varian Medical Systems)*. Other companies with headquarters out-of-state, such as *BD, GE Healthcare, Edwards Lifesciences, Fresenius Medical Care*, and *Stryker* have facilities here. Both Biomerics and Stryker are expanding their manufacturing capacity in the state, while BD has expanded with their acquisition of Bard Access Systems. In addition, life sciences IT and software companies, like *MasterControl, Orca Health*, and *Verisk Health* play an important role in the larger life sciences ecosystem.

GENOMICS, MOLECULAR DIAGNOSTICS, AND PRECISION MEDICINE

Utah ranks as the number three genomics market in the nation, based on innovation, talent, and growth metrics. *Myriad Genetics*' founding over 25 years ago was the start of the research-based diagnostics industry. *ARUP Laboratories* is a worldwide leader in diagnostic testing, with more than 3,000 employees. The testing landscape also includes *ApolloDx/CibusDx, BioFire Diagnostics, Lineagen, Sera Prognostics*, and *Sorenson Forensics*.

BIOTECHNOLOGY AND PHARMACEUTICALS

Companies engaged in drug discovery and development are another key driver of Utah's growing life sciences industry. This segment of the industry consists of startup companies, growth companies, and mature pharmaceutical companies. Many of these biotech and pharmaceutical companies—such as *Alucent Biomedical, Clene Nanomedicine, Navigen, Recursion, Thunder biotechnology*, and *Tolero Pharmaceuticals*—are pioneering new drugs, therapies, and methods of drug discovery to improve cancer treatments and address other unmet medical needs.

STARTUPS

Utah's life sciences startups help keep the industry vibrant by translating research into new life-changing medical products. For example, University of Utah spin-out *Recursion Pharmaceuticals* has a mission of developing 100 drugs in 10 years. Highly successful companies, such as Myriad Genetics and BioFire Diagnostics also grew out of the University of Utah. Startups not only translate breakthroughs into products to improve health, they also turn government investments, in the form of grants and incentives, into significant contributions to the economy.

Clearly, Utah's life sciences industry has a powerful presence in the state and local communities. Look for the industry to continue to build momentum and develop innovative medical device and testing solutions in the years to come.

"We are at the forefront of some of the world's best medical technologies and ground-breaking therapies."

— Gov. Gary Herbert

Today, with strengths in medical technology, diagnostics, biotechnology, and pharmaceuticals, the state's life sciences industry is one of the fastest growing in the nation.

MEDICAL DEVICES ECOSYSTEM BEGINS

1956
Disposable Plastic Catheter
Deseret Pharmaceutical Company

1967
Artificial Kidney
William J. Kolff
University of Utah

1970
Utah Population Database Created
Tool to help study genetic diseases
University of Utah

1973
Jarvik Heart
Robert Jarvik & Don Olsen

1973
First Artificial Arm
The world's first functional and most life-like prosthetic limb
Sarcos

1984
Pathology Testing
National Reference Laboratory
ARUP

1985
Time Releasing Medication
TheraTech Inc. *(now Actavis)*

1985
Actiq
Medication for Cancer Pain
Anesta *(now Teva Pharmaceuticals)*

1985
Microbiology Testing
Nelson Laboratories

1986
Rare Disease Pharmaceuticals
NPS Pharma *(now Shire)*

1987
Cardiology Medical Devices
Merit Medical

1990
Environmental Genome Project
Resource that integrates gene, sequence, and polymorphism data into individually annotated gene models
Utah Human Genome Center

1990
Idaho Techologies
(now bioMérieux)

1990
Lipidomics Reagents and Assays
Echelon *(now Frontier Scientific)*

1990
Molecular Diagnostics & Bio Surveillance
BioFire

1992–1994
Molecular Diagnostic BRCA1 (Breast Cancer Gene)
Myriad Genetics

2000
Hearing Aid
Sonic Innovations

2000
DNA Sequencing
Sorenson Genomics

2002
Commercialized the Unique Genetic Assets of Utah
GenData *(now Lineagen)*

Source: The Leonardo

Economic Impacts of Utah's Life Sciences Industry

Levi Pace Ph.D. | Senior Research Economist
Joshua Spolsdoff | Research Economist
Kem C. Gardner Policy Institute

The Utah Governor's Office of Economic Development (GOED) and BioUtah, the trade association for life sciences companies in the state, commissioned the Kem C. Gardner Policy Institute to analyze the role of the life sciences industry in Utah's economy.

The Gardner Policy Institute is pleased to share our findings about Utah's nationally recognized life sciences industry. Years of strong growth have made life sciences a vital strategic sector as we anticipate tomorrow's economic opportunities. We want to thank our great partners in this groundbreaking study—BioUtah, GOED, and the Utah Department of Workforce Services.

Life sciences companies created significant economic impacts during 2017 that benefitted companies and workers beyond the industry itself, making it an important economic driver for the state of Utah. This article examines the details of the life sciences industry's economic impacts, including jobs, personal income, GDP, tax revenue, and exports.

WHAT IS THE LIFE SCIENCES INDUSTRY?

Life sciences companies deliver technologies and services to improve personal health. They develop, manufacture, and distribute medical devices, pharmaceuticals, and related products. The life sciences industry includes biotechnology firms, medical laboratories, diagnostics companies, and support service providers.

ECONOMIC IMPACTS OF THE INDUSTRY

In 2017, the economic impacts in Utah from life sciences companies were:

- 130,439 jobs
- $7.6 billion in personal income (including benefits)
- $13.0 billion in GDP

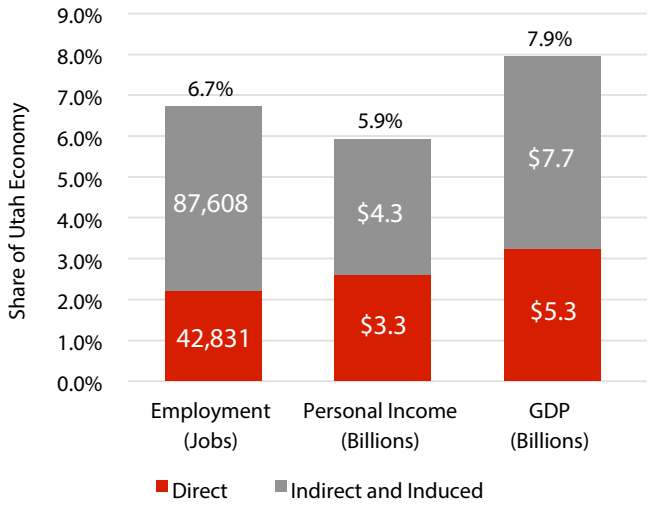
Jobs include employees at companies, as well as self-employed workers. These total direct, indirect, and induced estimates equaled 6.7 percent of Utah employment, 5.9 percent of its personal income, and 7.9 percent of its GDP in 2017. For example, 5.9 percent of all personal income in Utah came either from life sciences companies or from companies in other industries that were supported by purchases by life sciences companies and workers.

Utah's life sciences industry sold over 40 percent of its 2017 output of $9.6 billion to in-state customers, such that medical providers, pharmacies, and other buyers in Utah did not require out-of-state alternatives for $4.0 billion in goods and services. Nearly 60 percent of life sciences industry sales were to buyers in other states and countries, bringing $5.6 billion to Utah.

From 2002 to 2017, the average job growth rate was 3.3 percent per year in Utah's life sciences industry, compared to 2.1 percent in all other industries in Utah. Employment in the life sciences industry was more stable than employment in other industries. Its annual job growth remained above 1.4 percent each year since 2002, even during the past recession, when statewide job growth reached as low as –3.7 percent.

Average compensation per employee in the life sciences industry, over $86,000 in 2017, was 46 percent higher than average compensation in Utah, including all industries. Average employee wages alone, not including benefits, exceeded $68,000 for the life sciences

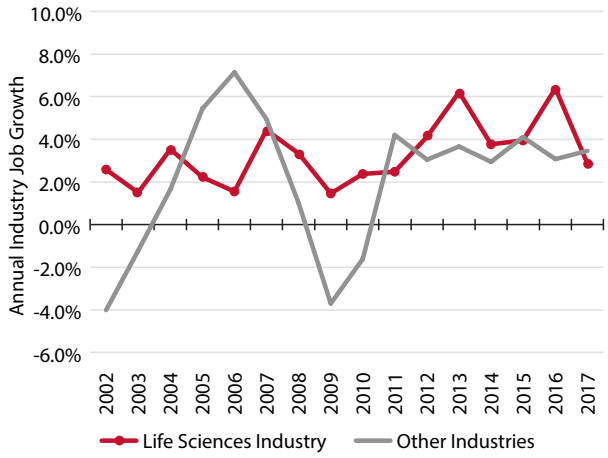
Utah Life Sciences Industry Economic Impact, 2017



Note: Employment includes full-time and part-time jobs. Personal income includes employee wages and benefits and proprietors' income. Direct amounts were from companies in Utah's life sciences industry. Indirect and induced effects apply to companies in any Utah industry supported by the in-state purchases of life sciences companies and by employees of life sciences companies spending their personal income in-state.

Source: Kem C. Gardner Policy Institute analysis of data from the Utah Department of Workforce Services, Utah Governor's Office of Economic Development, and Bureau of Economic Analysis, using the REMI PI+ economic model.

Utah Life Sciences Industry Annual Employment Growth, 2002–2017



Note: Percent growth for life sciences and the rest of the economy are calculated from annual averages of monthly employment in Utah, excluding proprietors. Preliminary 2017 employment is based on the first nine months. Historical data follows a legacy life sciences industry definition that differs somewhat from the definition for 2017 in other parts of the study.

Source: Utah Department of Workforce Services.

industry. Proprietors' income in the life sciences industry was nearly 45 percent above the statewide average. Proprietors include part-time, self-employed workers who often have other sources of income, such as employment in companies.

INDUSTRY COMPONENTS

Utah life sciences companies are categorized in four groups, adapted from those used by GOED, BioUtah, and Biotechnology Innovation Organization. The research, testing, and medical laboratories industry group directly contributed 16,120 jobs in 2017, followed by the medical devices and equipment group with 13,760 life sciences jobs. The drugs and pharmaceuticals industry group directly provided over 7,100 jobs, and life sciences distribution provided over 5,800 jobs.

Overall, the life sciences industry included over 42,800 full-time or part-time workers in Utah, of whom 16 percent were self-employed. The remaining 84 percent were employees at over 1,000 life sciences establishments located in 21 of Utah's 29 counties. Combined, these workers earned $3.3 billion in employee compensation and proprietors' income. They produced $5.3 billion in professional services, manufactured goods, and other products, measured as state GDP. The life sciences industry was directly responsible for 3.2 percent of Utah's $165.6 billion in GDP in 2017.

FISCAL IMPACTS

Total economic impacts from the life sciences industry resulted in additional tax revenue and government expenditures in Utah. Life sciences companies' operations in 2017 supported a net increase in state and local government revenue of $475.8 million. This includes $660.3 million in tax revenues paid or indirectly generated, less $184.5 million in additional demand for state, county, and school district expenditures. The analysis does not address revenue and expenses for cities or other entities.

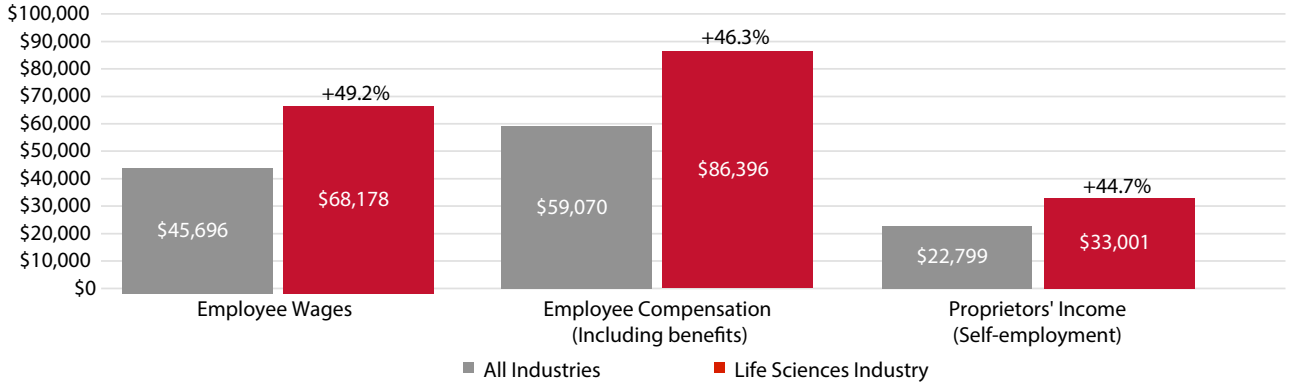
The net fiscal impact resulting from activity in the life sciences industry alone was $224.7 million. That includes taxes paid by workers and companies in the industry. Most fiscal impacts—56.8 percent of revenues and 67.2 percent of government expenditures—came from indirect and induced effects of the life sciences industry. While the life sciences industry's direct fiscal impact is significant, the industry supports larger tax revenue flows and requires more government expenditures through companies and workers that are part of its indirect and induced economic impacts in Utah.

IN-STATE AND OUT-OF-STATE SALES

The life sciences industry in Utah produced $9.6 billion in output in 2017. Output represents the sales value of goods and services and is, appropriately, much larger than a GDP of $5.3 billion. GDP measures value added by life sciences companies and adjusts sales by the cost of intermediate inputs to avoid double counting. Life sciences goods and services were sold in Utah and outside the state, both of which generated economic impacts in Utah.

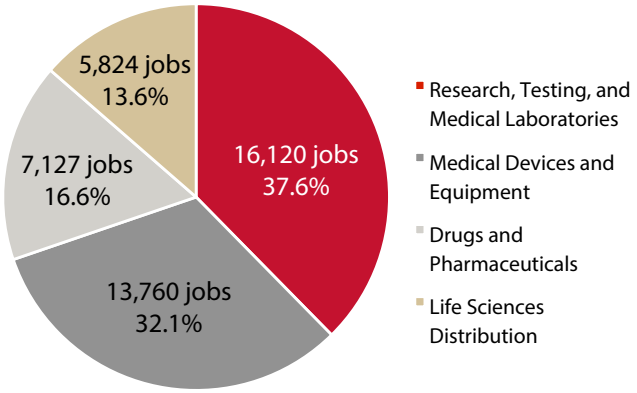
The Gardner Policy Institute estimated the amount of Utah life sciences output sold in state, out of state, and outside the country from industry averages in 2017. Nearly 60 percent of total output from Utah's life sciences industry was provided to customers outside the state. Almost three-fourths of these out-of-state sales were to buyers in other states, and over one-fourth were to buyers in other countries. Total exports from Utah to other states or countries amounted to an estimated $5.6 billion. This export-financed company revenue benefitted workers and companies in and beyond the state's life sciences industry.

Average Annual Earnings per Worker in Utah's Life Sciences Industry, 2017



Note: Life sciences industry wages and compensation are for its 36,050 employees. Life sciences industry proprietors' income is for 6,781 self-employed workers.
Source: Utah Department of Workforce Services and Bureau of Economic Analysis.

Utah Employment for Life Sciences Industry Components, 2017



Source: Utah Department of Workforce Services and Biotechnology Innovation Organization.

"Years of strong growth have made life sciences a vital strategic sector as we anticipate tomorrow's economic opportunities."

— Levi Pace, Senior Research Economist, Kem C. Gardner Policy Institute.

UNIVERSITY RESEARCH

Academic research is a key component of the ecosystem that supports life sciences companies. Life sciences research at public and private higher education institutions in Utah attracts out-of-state funding, such as federal grants, to the state. Faculty, staff, and students on Utah's college and university campuses do applied work to improve health care and develop medical technologies for commercialization.

Federal grants from the National Institutes of Health (NIH) are a significant funding source for life sciences research. In federal fiscal year 2017, Utah recipients were awarded $187.5 million in NIH grants. As much as 94 percent of NIH grants to Utah recipients were for life sciences research directly, while nearly 6 percent of the grants were devoted to education, training, and awards for researchers. The University of Utah, Utah State University, and Brigham Young University received 91 percent of NIH grants. Private companies received the remaining 9 percent.

MEASURING ECONOMIC IMPACTS

Economic impact is an estimate that focuses on jobs and spending arising directly and indirectly from new money entering a state. Exports from a state are one way to attract outside dollars. For example, Utah life sciences companies sell drugs and medical devices to pharmacies and healthcare providers in other states and countries. The direct jobs and spending to produce goods and services sold out-of-state generate economic impacts.

The direct, indirect, and induced economic activity that would be lost to a state in the absence of the industry can also be considered an economic impact. We refer to this as import substitution, in the sense of imports to a state, whether from abroad or another state. Whereas the life sciences industry's out-of-state sales (exports) bring in additional resources to grow a state's economy, in-state sales prevent an outflow of resources to purchase from companies outside the state (import substitution).

HOW DOES UTAH COMPARE TO OTHER STATES?

Among the 20 states with the largest life sciences industries in terms of 2017 employment, Utah has had the highest industry growth rate. From 2012 to 2017, job growth in Utah's life sciences industry averaged 5 percent per year. The state advanced from 17th to 14th among all states in terms of total life sciences employment, well above Utah's ranking of 31 for total employment in all industries. This state comparison is based on a limited life sciences industry definition, covering nearly 60 percent of the activity included in our detailed analysis for Utah, which could not readily be replicated for other states.

DELL LOY HANSEN - MORAL CAPITALIST

Travis Sessions | CEO, Biomerics, LLC
Jay Muse | President & CEO, Talon Surgical

Utah's life sciences industry wouldn't be as far advanced as it is today without the generous contribution of Dell Loy Hansen.

Dell Loy Hansen is known for his major league soccer team, his expansive real estate holdings, and his philanthropic donations, but what he's not as well-known for is his commitment to developing innovative medical technologies that provide greater value and better outcomes for patients—especially for technologies of this kind being developed in Utah.

Utah has a rich life sciences tradition, with industry pioneers such as James Sorenson and Dale Ballard paving the way to modern, innovative products and impactful research. These entrepreneur's efforts were the seeds that led to the establishment of many of Utah's largest medical device companies.

Despite its storied past, however, investment in new Utah life sciences companies has declined over the past two decades, as venture capital has moved away from medical devices and toward opportunities that are less risky and less strictly regulated.

Hansen has been a key player in maintaining and revitalizing Utah's investment in medical device startups since his entrance into the industry more than 20 plus years ago.

When Travis Sessions, founder and CEO of Biomerics, was looking for startup funding to commercialize its implantable polymers, he found the right partner in Hansen.

The rest, as they say, is history.

Starting back in 1994, Dell Loy Hansen was a partner in a plastics injection molding company, called Utah Plastics Group (UPG). The company molded parts for customers, working with a range of products and polymer-based materials. Some of these customers had utilized UPG to develop medical device components and housed a cleanroom in the injection molding space.

In 2008, Travis Sessions approached UPG partners to discuss the idea of an acquisition—morphing UPG into what is known today as Biomerics, LLC. It was at this meeting that Sessions and Hansen first formed the strong business relationship that continues to this day.

Biomerics followed Hansen's "better every day" philosophy, and with his guidance, the company has grown from a one-person polymer startup to a full-service medical device manufacturer with more than 1,100 employees.

Today, Biomerics is a competitive manufacturer of medical devices for the attractive and minimally invasive interventional market. Thanks to Biomerics' rapid growth, new life sciences business opportunities started to present themselves regularly.

Together, Hansen and Sessions worked to evaluate, develop, and invest in new medical device technologies, which led Hansen to eventually found MedVenture Holdings, a private growth equity company that invests in devices, technologies, and services for the healthcare market.

"Their idea was to link the innovators with the right ecosystem, which is not just about linking a 'creative' with an investor. That approach is often doomed, as we've seen all too often. Instead, they built an entire ecosystem that handles all aspects of medical device development: intellectual property, finance, accounting, HR, marketing, engineering, quality, regulatory, etc.," said Jay Muse, President and CEO of Talon Surgical.

Since its inception, MedVenture Holdings and its affiliates have invested in more than a dozen Utah-based medical device-related companies, including Muse's company Talon Surgical, which is focused on pericardial heart access; Piranha Medical, which is

developing an innovative solution to treat esophageal food impaction; and Piper Access, which is focused on next-gen vascular access devices.

MedVenture Holdings believes that medical devices can both lower healthcare costs and still deliver better outcomes to patients, with innovation acting as the key to their success.

Soon after they started MedVenture, Sessions and Hansen met with Muse, who had recently retired from a large medical device company with the intent to pursue his passion for designing innovative medical devices.

"[In that meeting] I expressed my desire to make a difference in the world around me, instead of just focusing solely on the money," Muse said.

Muse knew it was a good fit when Hansen used a Marcus Aurelius quote.

"The only wealth you will keep forever is the wealth you have given away," he said.

"We both identify as Stoics, and for a Stoic it's not primarily about the money, it's about your duty to improve the community," Muse said.

Thanks in large part to Hansen, MedVenture's efforts are paying off.

Talon Surgical was founded in late 2015, and within two years had already received an offer on one of its devices from a large, international medical device manufacturing company.

"We decided not to sell that particular asset… but it was a very good indication that we were on the right track," Muse said.

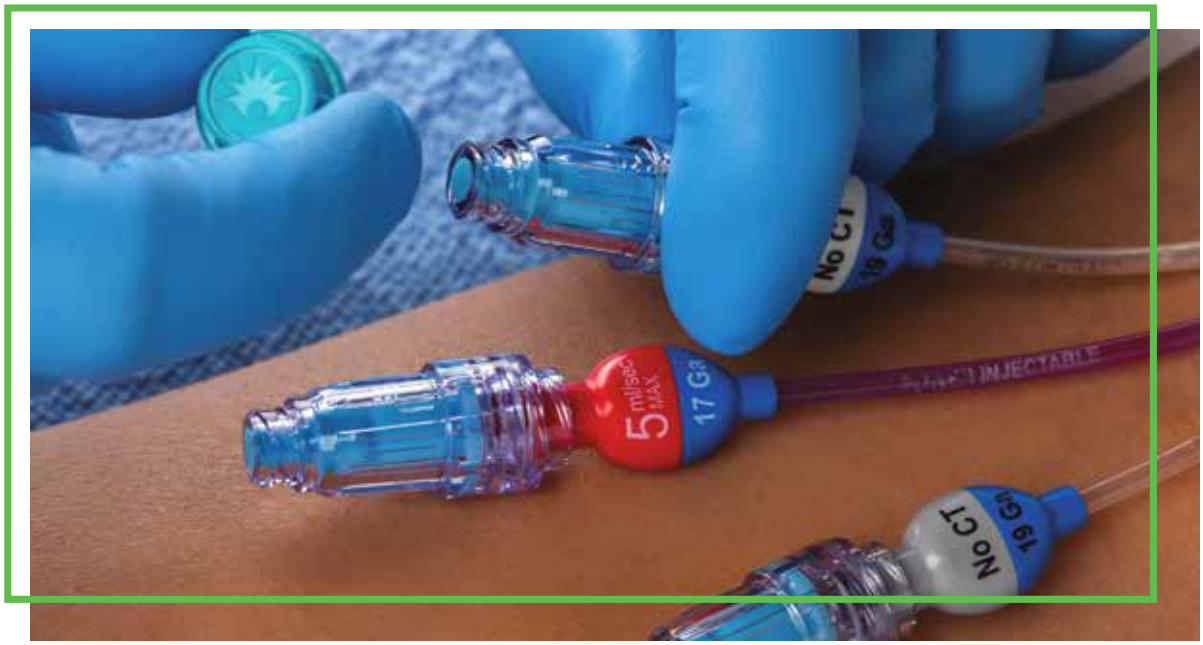
Shortly after Talon Surgical was founded, Muse created an infusion therapy device company called Piper Access. Within 18 months, Piper had received an offer on its series of emergency medical procedure devices.

"We decided to accept that offer, because we felt that a partnership with the acquiring company would accelerate the adoption of the device," Muse said.

"We don't go after incremental improvements. We want to make a mark," he continued, before praising Utah's dedicated healthcare community. "Physicians here in Utah are ranked up there with the very best out there, and they have a deep passion for improving healthcare. That passion is essential for medical device innovation, and Utah couldn't be in a better position."

Utah's life sciences industry wouldn't be as far advanced as it is today without the generous contribution of Dell Loy Hansen.

"Dell Loy is a special talent," said Sessions. "He has a unique ability to judge opportunity and risk. He brings talent and capital together to create lasting value for all stakeholders."



Advancing the World of Health from Utah

Rob Fredericks | Vice President and General Manager | Vascular Access Devices | BD

BD (Becton, Dickinson and Company) is one of the world's largest medical technology companies and is a healthcare leader that is advancing the world of health by helping the people who help the patients. The company provides technology, services, solutions, and expertise to those on the frontlines of healthcare, as well as medical technology and interventions for patients. BD is focused on providing solutions to key challenges facing the global healthcare system including increasing access to healthcare, enhancing patient outcomes, improving safety, and reducing costs.

BD + BARD

In December 2017, BD completed the acquisition of C. R. Bard, Inc., which was a transformative moment for both companies and for the healthcare industry at large. Thanks to the merger, BD has strong category leadership in areas that are critical to the future of healthcare. The company leads in vascular access options, including PICCs (peripherally inserted central catheters), midlines, and drug delivery ports, as well as leadership and innovation in IV drug preparation, medication dispensing, intelligent and connected infusion systems, and comprehensive analytics. These advantages provide end to end medication management solutions across the care continuum. With healthcare-associated infections (HAIs) costing the U.S. healthcare system more than $35 billion per year, BD is well-positioned to provide direct solutions that address 75 percent of the most costly and frequent HAIs. BD leads in clinical therapies and medical technologies for costly diseases such as peripheral vascular disease, chronic kidney disease, and diabetes. Those three diseases alone have a cost burden of more than $400 billion annually. Antimicrobial resistance (AMR's) another emerging threat, is projected to grow to 10 million deaths by 2050, making it deadlier than cancer. BD is helping to lead fundamental change in the treatment of these conditions by developing medical technology to help prevent the spread of infections, provide accurate diagnosis to ensure proper treatment, and using surveillance and reporting to ensure that the appropriate therapy is administered. These are just a few examples of the significant challenges and opportunities that the combination of BD and Bard can now address.

"BD is a shining example of what makes Utah great. BD's commitment to cutting-edge advancements in medical technology, to environmental stewardship, to providing great jobs in our state, and its commitment to giving back to the community make all of us proud."

— U.S. Representative Mia Love

BD IN UTAH

BD has a proud history in Utah. The company traces its roots to Deseret Pharmaceutical, which started in Murray, Utah in 1956, and which BD acquired in 1986. Bard has had a presence in the Beehive State since 1984, when it acquired Evermed.

The acquisition of Bard boosts BD's profile in Utah as one of the two largest life science companiese in terms of employment, and adds a strong product portfolio and innovation pipeline to increase opportunities in fast-growing clinical areas. The combined operations of BD and Bard in Utah serve multiple BD business objectives through the design and manufacture of products that deliver important intravenous medical therapies to patients, as well as blood collection devices and other surgical products.

BD also has undergone extensive research and development efforts in Utah. The company's inventors have a tradition of innovation, generating more than 670 patents worldwide for products related to IV therapy. BD is the world leader in intellectual property for the IV catheter space, and BD developed the world's first, over-the-needle catheter right here in Utah.

BD employs more than 1,500 associates in both professional and manufacturing positions in Utah, with salaries ranging above the state average. In addition, the company is focused on key sustainability initiatives, including the BD manufacturing plant in Sandy, Utah, that operates entirely on renewable energy and is a landfill-free facility, where waste is reduced, recycled, or converted to energy.

Over the past decade, BD has invested more than $200 million in capital improvements and has contributed more than $1 million to local charities, educational institutions, and community service organizations.

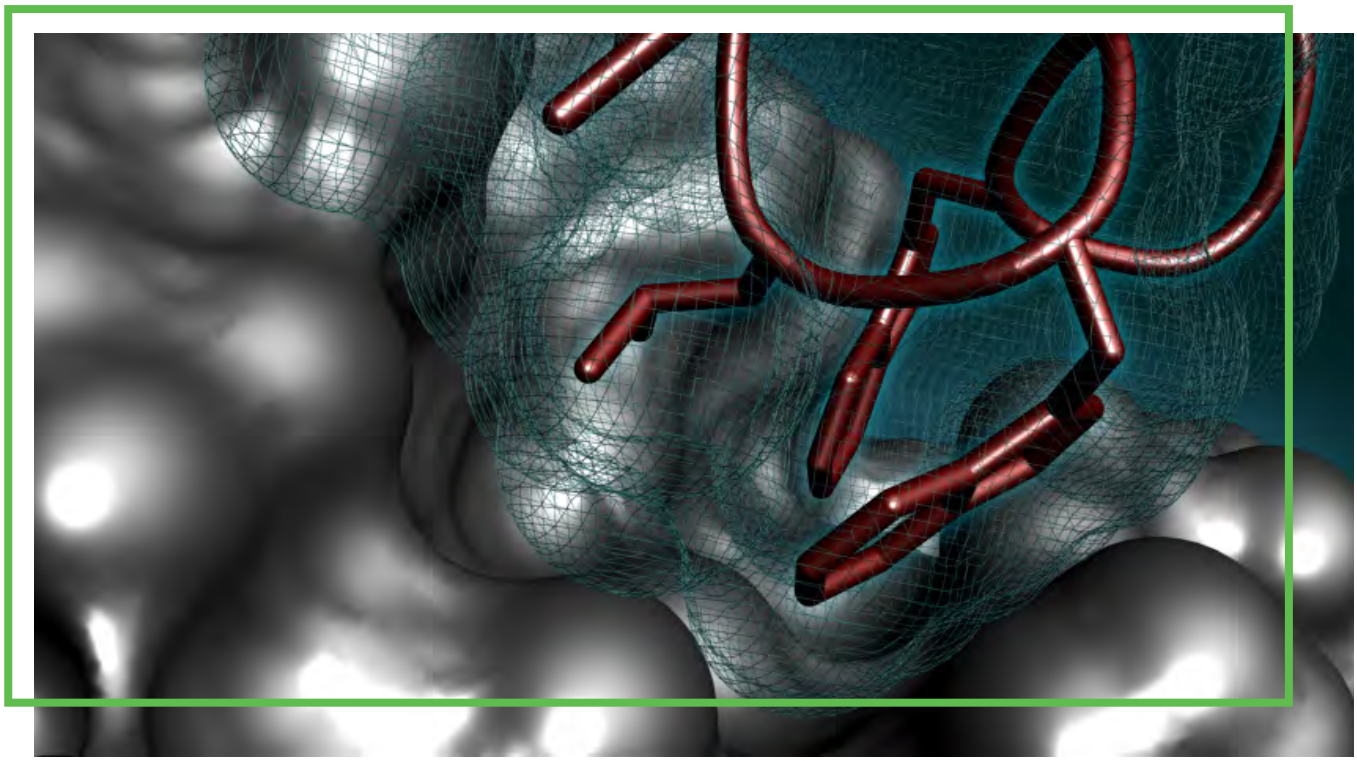
BD's operations in Utah exemplify the company's purpose of advancing the world of health. Products designed and manufactured in Utah enable the company to serve the needs of patients across every state in the U.S. and are exported to nearly 100 countries around the world.

"BD and Bard have helped lead the life science industry in Utah for more than 50 years, and the combination of these two innovators will continue to help drive the state's hi-tech economy and help position Utah as a world leader in medical technology."

— Gov. Gary Herbert

BD AT A GLANCE

- Company founded in 1897 and established in Utah in 1956
- More than 65,000 employees globally with more than 1,500 employees in Utah
- BD products in Utah exported to nearly 100 countries
- More than $1 million in charitable giving over the past decade
- BD in Utah has generated more than 670 patents



NAVIGEN - Blazing New Trails For HIV and Cancer Treatments

Brandi Simpson | CEO of Navigen, Inc.

Navigen, Inc. is a drug discovery and development company expecting to have their first therapeutic in clinical testing early next year. Based in Salt Lake City, the company is striving to be the world's leader in establishing an important new drug class, D-peptide therapeutics. Navigen believes that D-peptides are the answer for many drug targets thought to be "undruggable."

Peptide therapeutics, which are composed of naturally occurring L-amino acids, have been used to treat human disease for over 100 years (insulin is a well-known example). Therapies composed of naturally-occurring peptides could be ideal drugs; they are generally safer than small molecule drugs and are small enough to get to hard-to reach targets. However, peptides don't last very long before the body breaks them down. This means that most peptide drugs must be taken frequently and at relatively high doses, especially when prolonged exposure is necessary.

D-peptides do not share this limitation. Composed of D-amino acids, which are the mirror image of L-amino acids, D-peptides don't occur in nature and the enzymes in the body that are programed to break down peptides don't detect them. This gives D-peptides a significant advantage over natural peptides as therapeutics, since they can remain intact in the body for significantly longer.

Though scientists have known about D-peptides for quite a long time, they haven't had the technology to use them as commercially viable drugs. Further, the skill required to identify and develop D-peptide therapies is limited to only a few groups. The scientists at Navigen and their collaborators at the University of Utah, doctors Michael Kay and Debra Eckert, have this expertise, and may just be the best in the world at leveraging it.

Navigen's most advanced program, CPT31, a D-peptide for HIV treatment and prevention, has the potential to be the first FDA-approved drug composed entirely of D-peptides, with the first human studies starting early next year. A safe and effective treatment for HIV isn't all that Navigen is working on. The company has other programs in development for cancer immunotherapy and inflammatory diseases. Navigen expects to continue to utilize its unique capabilities for discovery of D-peptide therapeutics to address serious diseases.

Tolero Pharmaceuticals: Utah Company Developing Novel Therapeutics

David Bearss | Founder and CEO | Tolero

Tolero Pharmaceuticals, Inc. is a clinical-stage biopharmaceutical company researching and developing treatments to improve and extend the lives of patients with oncological and hematological diseases. Our diverse pipeline targets important biological drivers of blood disorders to treat leukemias, anemia, and solid tumors, as well as targets of drug resistance and transcriptional control. Tolero Pharmaceuticals is based in the United States and is an indirect, wholly owned subsidiary of Sumitomo Dainippon Pharma Co., Ltd., a pharmaceutical company based in Japan.

Tolero moved into its new headquarters at 3900 North Traverse Blvd. in October 2017 and has been headquartered in Lehi since its inception in 2011. Tolero's new facility includes a research laboratory where the company will continue to advance its pipeline of potential treatments for acute myeloid leukemia and other cancers.

Myriad Genetics: Helping Patients Access Personalized Medicine

Ron Rogers | Executive Vice President | Corporate Communications | Myriad Genetics, Inc.

Salt Lake City-based Myriad Genetics is one of the largest and most successful personalized medicine companies in the world; it aspires to save and improve patients' lives with pioneering molecular diagnostic tests. The company was founded in 1991—born as a spin-off from the University of Utah—a full decade before the human genome was published. Today, the company employs 2,800 people, with around half living and working in Salt Lake.

ENABLING PERSONALIZED MEDICINE

Since 1991, the company has pioneered multiple scientific discoveries including the discovery of the BRCA 1 and BRCA 2 tumor suppressor genes, and commercialized molecular diagnostic tests that have made it possible to diagnose and treat a variety of diseases both earlier and with greater precision. Myriad is not waiting for personalized medicine to become a reality—they're making it a reality.

Personalized medicine refers to the field of medicine that uses specific biological markers to help assess which medical treatments and procedures will benefit each patient. Myriad uses its expertise in DNA, RNA, and protein biomarkers to develop tests that answer patients' four most pressing questions about disease:

1. *Will I get a disease?*
2. *Do I have a disease?*
3. *Should I treat this disease?*
4. *How should I treat this disease?*

The information generated by Myriad's tests help create a molecular profile of an individual that helps doctors and healthcare providers target the right treatment for a given patient. This targeted approach to treatment benefits not only patients but also improves overall efficiency in the healthcare system.

DIVERSE PRODUCT PORTFOLIO

Today, the company's product portfolio includes many first or best-in-class tests and is focused on six areas: autoimmune diseases, dermatology, neuroscience, oncology, urology, and women's health.

- **BRACAnalysis CDx®** is a test that determines if patients with ovarian and metastatic breast cancer are eligible for treatment with a class of drugs called PARP inhibitors.
- **EndoPredict®** helps women with early breast cancer determine if they can safely forgo chemotherapy and the associated side effects.
- **Foresight™** identifies the carrier status of couples to determine the risk of hereditary conditions before conception.
- **Genesight®** psychotropic improves remission and response rates for patients with depression by identifying the most genetically optimal medications.
- The **myRisk®** hereditary cancer test identifies people at risk for eight types of hereditary cancer.
- **Prelude™** is a non-invasive screening test to detect a fetus's risk for chromosomal conditions.
- **Prolaris®** is a test that measures the aggressiveness of prostate cancer and helps men decide if active surveillance or surgery is best for them.
- **Vectra DA** predicts the risk of joint damage for patients with rheumatoid arthritis and helps inform treatment decisions.

FOCUS ON R&D

Myriad continues its work to accelerate the promise of personalized medicine for the millions of patients who are still suffering. The company has invested hundreds of millions in R&D, including $358 million since 2013, and this investment is bearing fruit. Last year, the company made 70 important presentations at medical conferences and published 23 papers in peer-reviewed scientific journals. Much of this R&D work was done in collaboration with talented scientists at major academic centers and pharmaceutical companies to support ongoing clinical development programs.

GROWTH OPPORTUNITIES IN UTAH

The traditional trial-and-error treatment approach is no longer the goal, as society enters a golden era of personalized medicine. Myriad is uniquely positioned to lead this revolution in patient care and expects to continue to grow in the years ahead. As the company expands, it is committed to attracting, retaining, and motivating the exceptional people needed to carry out its life-saving mission. In 2018, Myriad was recognized by Forbes magazine as one of the best mid-sized employers in the United States. Individuals interested in career opportunities should visit www.myriad.com for more information.

Utah Startups and the Innovation Ecosystem

By Brian Somers | Managing Director | USTAR

Utah is home to a booming life sciences industry that features a full spectrum of companies, ranging from homegrown international leaders—such as ARUP Laboratories, BioFire Diagnostics, Merit Medical, and Myriad Genetics—to startup companies still in the early innovation stage.

Utah provides fertile ground for native ideas and research to blossom into strong companies. However, even with many notable successes, Utah life sciences entrepreneurs must navigate a highly technical, capital intensive, competitive, and tightly regulated industry.

"The commercialization of life sciences and biotech innovations is a challenge, and founders of these companies need to be fearless," said June Chen, M.D., partner at Church & State, a non-profit business incubator. "They also need funding, mentorship, incubation facilities, and opportunities to engage with investors."

To offset these challenges, Utah must maintain a strong innovation ecosystem. From basic research at Utah's universities, to university technology transfer offices, to state-supported tech commercialization programs like those of the Utah Science Technology and Research Initiative (USTAR), and the Technology Commercialization and Innovation Program (TCIP) at the Governor's Office of Economic Development (GOED), to Small Business Development Centers and Business Resource Centers, to private and nonprofit incubators and business acceleration programs—each of these essential ecosystem components are needed to support Utah's life sciences innovators.

Together, these resources provide a platform for entrepreneurs to advance their technology development and commercialization, to build and scale their businesses, form industry partnerships, and connect to capital.

Market data show that access to risk capital for entrepreneurs in the "deep technology" space—that is, tech sectors outside of IT software like life sciences, aerospace, cleantech—is very scarce for companies in the seed stage. Over the last five years, less than 10% of private seed capital has been invested in deep tech companies.

"As scientific research moves toward product development, access to federal funding becomes scarce. However, most technologies are still too risky to attract risk capital and move into the so-called 'Valley of Death,'" said Barbara Araneo, Ph.D., USTAR's emerging technologies lead. "Publicly-funded programs help these early stage companies survive by providing competitive grants, technical expertise, incubation facilities, and product development experience, to de-risk their technologies, attract private investment, and get their products to market."

RefloDX, won an early-stage Utah Innovation Award and is located at a state-supported incubator. The company is developing a non-invasive medical device to monitor gastroesophageal reflux, a disease that affects more than one-fourth of the U.S. population.

"These state programs gave us the resources we needed, including funding, industry contacts, and mentorship that we didn't have before," said Rudy Wilcox, founder of RefloDx. "We were able to acquire the initial skillsets our company needed to succeed."

There are numerous examples of life sciences startups which have received support from Utah's innovation ecosystem to further their tech and business development:

nView Medical is developing a surgical image guidance system with on-demand, computed 3D views. This approach has implications for surgeries typically employing fluoroscopy to tangibly assist the accuracy of the procedure as well as fit with surgical workflow.

Majelco Medical is developing a disposable blood-capturing device that will measure blood loss during surgery. Targeting moderate blood loss surgeries, the device will give accurate blood loss information to the surgical staff and blood management teams.

Rosivo recently won the Life Science – Medical Device category at the Utah Innovation Awards. Rosivo's lead product is the cartilage frame of a trachea intended as a repair implant.

AccuBreath, having completed the intensive Phase 0 NSF I-Corps program, has validated a solution for respiratory monitoring and assist during moderate sedation in colon cancer screening.

NovaBio Technologies, winner of OneStart Americas division competition, is a woman-owned company developing a coil-shaped, biodegradable device that holds surgically repaired tendons and ligaments together to accelerate proper healing and reduce the need for second-repair surgeries.

Esplin Organics is testing alternatives to environmentally harmful antibiotics to protect honey bee broods.

Knudra Transgenics has adapted a popular laboratory critter, C. elegans, to host human disease-causing genes and then test drugs that may have a disease modifying effect.

IDbyDNA is in the gene discovery space having created analytical tools to identify each source of DNA in a complex sample. The technology is applicable to multiple fields, including infectious agents, food waste, body fluid analysis, and environmental material.

T3S provides world-renowned genetic expertise and a ground-breaking platform for recombinant proteins that are difficult to make. The T3S approach exploits a little-known secretion pathway to mass-produce recombinant proteins in high quantities and without aggregation.

"Utah taxpayers, citizens, and entrepreneurs have long shown their commitment to life sciences innovation," said Denise Bell, Acting President and CEO of BioUtah. "We are fortunate to have a strong community committed to helping entrepreneurs make a tangible difference in medical technologies, diagnostics, drug discovery and development, and other segments within our life sciences economy. This commitment—including the support of essential state programs—must continue for our innovation ecosystem to grow and remain healthy and competitive."

Q&A with Mark Paul, President, Neurovascular Division at Stryker

HOW IS STRYKER CHANGING STROKE CARE?

Annually, 795,000 strokes occur in the United States; that equates to one stroke every forty seconds. Stroke is the number one cause of disability in the United States and the fifth leading cause of death; and Stryker's Neurovascular division has made it their mission to develop the worlds leading technologies in the fight against this catastrophic disease.

In 2017, Stryker announced that it would be making another significant investment through its mission to make healthcare better with an expansion in Salt Lake City; opening a 137,000-square-foot facility to manufacture its stroke care products and provide a world-class neurotechnology training facility for physicians.

WHY DID STRYKER DECIDE TO EXPAND MANUFACTURING OPERATIONS IN UTAH?

Stryker has been operating in the Salt Lake City area since 2011, which allowed us to realize the many benefits Utah offers the life sciences industry. First and foremost, Utah has a highly talented workforce; with eight universities in the immediate area providing a strong and steady pool for future recruitment of talent.

Secondly, it is a major airline hub, Salt Lake City has become the gateway to the West, allowing physicians from around the globe easy in-and-out access to our state-of-the-art training facility.

In addition, both West coast sterilization companies are located in Salt Lake City. Aligning the location of our manufacturing facilities allows us to take advantage of shortened transit times for our products; ultimately reducing our manufacturing timelines to bring products to market more quickly.

Finally, the lower costs of real estate provide our team the flexibility for greater expansion opportunities in the future.

WHY DOES UTAH HAVE AN AMAZING WORKFORCE FOR THE MEDICAL DEVICE INDUSTRY?

We are seeing the university system prepare and develop the types of individuals we want to hire; results driven, passionate and innovative employees who are seeking to improve the lives of patients.

With more than twenty different degrees immediately linking to the medical device industry, and the collaboration across colleges, programs and healthcare institutes, it is clear to us that the Utah educational system is devoted to preparing the next generation of industry leaders while also making an investment to keep the life sciences industry rooted to the area.

IF YOU WERE GOVERNOR FOR A DAY, WHAT WOULD YOU DO?

I would put my efforts into the life sciences. It is an honorable industry; we are helping improve the lives of people who are suffering and sick. Life sciences has also shown to be resilient to economic changes, provides higher paying salaries and receives essential support from state and local governments in the form of tax breaks and incentives which ultimately attract greater numbers of both companies and jobs to the state. The industry has an amazing halo effect in creating many spin off companies, labs, machine shops etc.

ABOUT STRYKER

Stryker is one of the world's leading medical technology companies and, together with its customers, is driven to make healthcare better. The company offers innovative products and services in Orthopaedics, Medical and Surgical, and Neurotechnology and Spine that help improve patient and hospital outcomes.

strykerneurovascular.com
Salt Lake City

YEAR FOUNDED: 1941 | Utah: 2011 | Expanded: 2016

Q&A with Chris Gibson, PhD, Co-founder and CEO of Recursion Pharmaceuticals

The conventional path to drug discovery can take 10 to 15 years, costing more than $1 billion. This is too slow and costly for the 7,000+ rare diseases that affect an estimated 30 million Americans. To efficiently discover therapies for these rare diseases, as well as inflammation and diseases of aging, Recursion Pharmaceuticals is disrupting drug discovery with advanced experimental biology, automation, and artificial intelligence. Recursion's goal is 100 drugs by 2025.

WHAT IS THE INNOVATION BEHIND RECURSION?

For 60 years, the drug discovery industry has seen a decline in R&D efficiency and an increase in costs. We want to treat more patients – faster – by dramatically decreasing the time and costs traditionally associated with drug discovery. To do this, we leverage artificial intelligence that is better at analyzing and tracking cellular changes. For example, diseased cells are often abnormal in appearance and function. Looking at hundreds of parameters and tens of thousands of human cells, we test the ability of drugs to restore diseased cells to a normal appearance, which is often a good predictor of a drug's success or failure.

WHY IS THE LIFE SCIENCES INDUSTRY IMPORTANT TO UTAH?

The life sciences industry brings high-paying jobs and highly educated people to Utah, helping to build a prosperous state economy. We want to help build Utah's reputation for its significant contributions to society, including many life-saving, health-improving innovations.

WHY IS BEING IN UTAH IMPORTANT TO YOUR COMPANY?

Utah offers great quality of life, access to the outdoors for an active lifestyle, and the ability to grow businesses faster with less risk than many other states. Utah's cost of living is low com-pared to biotech hubs in California and Massachusetts. Transportation is readily accessible, including direct flights to all major US cities.

WHAT CAN BE DONE TO SUPPORT THE INNOVATION INDUSTRY IN UTAH?

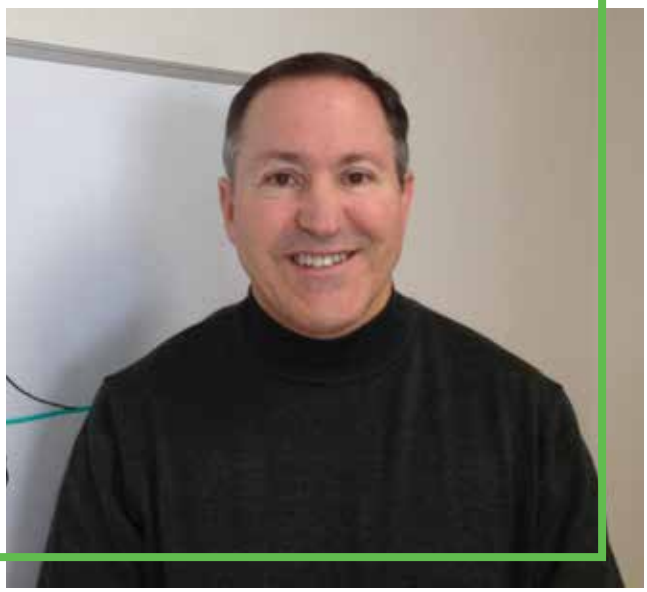
We need to support, and even increase, federal funding. Recursion has received $4 million in NIH Small Business Innovation Research grants, which have helped us de-risk our technology and secure $85 million in private venture financing.

ABOUT RECURSION PHARMACEUTICALS

Recursion Pharmaceuticals is an emerging biotechnology company that combines experimental biology and bioinformatics with artificial intelligence to identify treatments for any disease which can be modeled at the cellular level.

recursionpharma.com
Salt Lake City

YEAR FOUNDED: 2013



Q&A with Gregory C. Critchfield, MD, MS, Chairman, President, and CEO of Sera Prognostics

WHY IS THE PRETRM® TEST IMPORTANT?

In the U.S., 1 in 10 women have a premature baby. More than 50 percent of women pregnant with a single baby who deliver early have no known risk factors. Traditional tools fail to identify over 80 percent of such women. To develop the PreTRM® test, Sera created a specimen biobank and analyzed blood samples from women who delivered babies early, comparing them to women who delivered normally. We discovered biomarkers that are highly predictive of preterm birth, enabling us to develop our test. The test was rigorously validated to predict the risk of premature delivery by analyzing blood taken from the mother, during weeks 19 or 20 of pregnancy. The test provides accurate risk information to enable physicians and their patients to more proactively address the risks of prematurity - delivering healthier newborns and reducing healthcare costs.

WHAT IS YOUR APPROACH TO INNOVATION?

We focused on premature birth as a big problem that needed a better solution. Our scientific approach is unique—discovering important biomarker changes in pregnancy.

WHY UTAH?

There is a strong heritage of innovation and collaboration in Utah, as well as diagnostic expertise. Before joining Sera, I served as president of Myriad Genetic Laboratories, where we launched seven novel molecular diagnostic products. This required experts in a number of areas. Utah offered a highly educated and experienced workforce, with substantially lower costs than in California or Massachusetts. Utah has great access to the outdoors, proximity to world-class ski resorts, and is an affordable place to live.

WHY ARE INNOVATION AND THE LIFE SCIENCES IMPORTANT TO UTAH?

Life sciences companies build products and services that improve the human condition. Life sciences require a highly skilled workforce, with typically higher-paying jobs. These companies do not have a negative impact on the environment and help withstand economic downturns.

IF YOU WERE GOVERNOR FOR A DAY, WHAT WOULD YOU DO?

I would put more emphasis on funding life sciences research. Funding is one of the biggest issues facing life sciences companies. We need to help them attract capital to give them time to create things of value. Investing in life sciences now will provide significant financial returns to Utah for years.

ABOUT SERA PROGNOSTICS

Sera's vision is to be a global leader in women's health. Sera's first test, PreTRM®, provides early accurate prediction of preterm delivery risk.

seraprognostics.com
Salt Lake City

YEAR FOUNDED: 2006

Q&A with Shawn Fojtik, CEO, Control Medical Technology and Distal Access

WHY IS BEING IN UTAH IMPORTANT TO YOUR COMPANY?

Utah has a strong commitment to patient care and we can get more done for a given (venture) dollar.

WHAT DO YOU THINK UTAH DOES BETTER/BEST?

Return on investment.

WHAT DO YOU THINK UTAH DOES WELL IN SUPPORTING THE LIFE SCIENCES INDUSTRY?

Overall governmental support programs (TCIP, BiG, USTAR etc.) build a positive environment for entrepreneurs. Administration costs for a startup is the least-efficient spending. Support from shared services to providing matching fund grants, helps a new company focus dollars on innovation, prototyping, and commercialization.

WHAT IS THE BIGGEST CHALLENGE FOR THE UTAH LIFE SCIENCES INDUSTRY?

Medical device commercialization is an apprentice-like business. Future leaders need mentors that allow developing talent to see and participate in how devices are commercialized.

HOW WOULD YOU DEFINE OR DESCRIBE THE UTAH LIFE SCIENCES ECOSYSTEM?

Strong ecosystem and talent base with high-growth potential.

HOW DO YOU INNOVATE?

We look for patient safety, procedural effectiveness, and/or financial gaps. Often, we draft behind more complex movements in the space, like atrial fibrillation treatment or complex stent-blood clot retrievers, with a simple technology to make those procedures safer, faster, better, and/or cost less.

WHAT ARE SOME OF YOUR MARKETED PRODUCTS / PRODUCTS IN DEVELOPMENT?

- Aspire Mechanical Thrombectomy System (blood clot removal/mechanical aspirator)
- Shavr Tissue resector
- Bone marrow harvest & Biopsy

ABOUT CONTROL MEDICAL TECHNOLOGY

Control Medical Technology is a development stage medical device company committed to commercialize safe and clinically relevant devices for improved patient care.

aspirationmedical.com
Park City (Headquarters)

YEAR FOUNDED: 2007

ABOUT DISTAL ACCESS

Distal Access, LLC designs and develops medical devices., including guidewire and catheter controllers, and thrombus macerators.

distalaccess.com
Salt Lake City

YEAR FOUNDED: 2012

Jake Willis, Nelson Laboratories, mentors Medical Innovations Pathways students March 28, 2017

Life Sciences Workforce for Today and Tomorrow

Denise Bell | Director | Medical Innovations Pathways | BioUtah

Like other fast-growing industries in Utah, the life sciences sector puts a premium on workforce development and talent recruitment - and for good reason! Utah's life sciences industry has a high demand for skilled workers in manufacturing and STEM-related fields. There's also high demand for C-suite talent and experienced scientists who can help put new startups on the map.

Utah's workforce has always played a key role in attracting business to the state. In fact, Utah's strong work ethic and educated populace are often cited as one of the primary reasons why companies choose to establish themselves here. Approximately 91.2 percent of adults in the state have earned at least a high school degree, and nearly half have a college degree or certificate. It's also a youthful population, with the third highest number of millennials (between the ages of 20 and 34) in the nation.

"We want to maintain that advantage," said Theresa Foxley, President and CEO of the Economic Development Corporation of Utah. "Utah's life sciences employers understand the importance of creating and training a pipeline of workers, leaders, and entrepreneurs for the next generation. They've made strengthening the workforce a priority."

In fact, building a 21st-century workforce becomes even more imperative in Utah, since it's experiencing a tight labor market. In August, 2017, Utah's unemployment rate stood at 3.1 percent, well below the national rate of 3.9 percent.

"We're a forward-thinking industry," said Jeff Nelson, President of Nelson Laboratories, a Sotera Health company. "We value our people and want to find ways to increase our workforce and address skill gaps. Fortunately, in Utah, government, education and industry are already at the table, collaborating to better link classroom learning and training programs with real-world industry needs." For example, Utah schools and technical colleges have advisory committees with industry representation to provide input on course content. In addition, the state has established targeted initiatives to help prepare students and adult learners for solid jobs and careers with medical device manufacturing and laboratory testing companies.

One such initiative, targeted at the life sciences, is the Medical Innovations Pathways (MIP) program. The program, launched in 2016 as part of Gov. Gary Herbert's Talent Ready Utah blueprint, provides high school students with the training needed to open the door to

Medical Innovations Pathways Industry Partners

- BD
- BioFire Diagnostics
- Biomerics
- Edwards Lifesciences
- Fresenius Medical Care
- GE Healthcare
- Merit Medical Systems
- Nelson Laboratories
- Sorenson Forensics
- Stryker
- Varex Imaging

Biomerics CEO, Travis Sessions, addressed Medical Innovations Pathways Graduates at the State Capitol, May 2, 2018

"We're a forward-thinking industry. We value our people and want to find ways to increase our workforce and address skill gaps."

— Jeff Nelson, President, Nelson Labratories

exciting careers with Utah's medtech and bioscience companies. Students can choose between a medical device or laboratory track. They're required to complete certain courses and shadow industry professionals on the job to learn more about what it's like to work in this field. Program graduates receive a Medical Innovations Certificate and are guaranteed job interviews with participating industry partners. This year, the program graduated 50 students in a ceremony at the State Capitol.

"The MIP program opened my eyes to careers in medical device manufacturing," said Cort Olschewski, a student in the first MIP graduating class. "I took relevant coursework and spent time at companies getting to know about quality compliance and the amazing products this industry produces to help patients." Olschewski is now working for Merit Medical while pursuing a mechanical engineering degree at the University of Utah.

"We're excited to have Cort on the Merit team," noted Ron Frost, chief operating officer for Merit, and member of the MIP executive committee. "As an industry, we're in the innovation business so we welcome innovation in education to help create a talent pipeline."

Nearly a dozen companies participate in MIP and partner with the Governor's Office of Economic Development (GOED) and educators to help bring this novel program to students in the Alpine, Canyons, Davis, Granite, Jordan, and Tooele school districts. Throughout the school year, these companies host field trips and makes class presentations to share their enthusiasm for working in an industry that makes a real difference in healthcare.

Another collaborative workforce initiative is the Utah Department of Workforce Services' Invest in You Too program. The program is designed to train and place adult learners in jobs in medical device manufacturing. The 13-week program, based at Salt Lake Community College (SLCC), is specifically focused on preparing single mothers for jobs in medical device manufacturing. In addition to SLCC courses, Workforce Services case managers and therapists provide intensive life skills training. These life skills classes cover topics such as work readiness, success in the workplace, and stress management.

"Workforce Services is pleased to help support these women as they work hard to obtain a job and life skills that will change the future of their families," explained Elizabeth Carver, director of the workforce development division, program, policy, and training at the Department of Workforce Services. The program has placed a number of single mothers in good, stable jobs with major employers in the state such as BD, BioFire Diagnostics, Edwards Lifesciences, Merit Medical, Stryker, Varex Imaging, and others.

Those already employed in the industry have opportunities to upgrade their skills and advance through continuing education and certification programs offered at Utah's community and technical colleges. Davis Technical College (DTC) has created a new program, Project Career Launch, to provide additional training to those seeking employment in the life sciences industry. Under this creative program, employers refer job applicants to DTC for additional training, which helps candidates qualify for positions and start a career. SLCC offers a Medical Device Manufacturing: Processes and Practices certificate program which addresses competencies important to Utah's medical device companies. These types of industry-focused programs help to further strengthen a workforce baseline.

"The Governor's Office of Economic Development seeks to meet the immediate and long-term needs of employers. Through a collaborative approach, our goal is to build a strong workforce for our children and grandchildren," said Val Hale, Executive Director of GOED.