

LIFE SCIENCES IN UTAH



ON THE COVER

Edwards Lifesciences Sapien 3 Heart Valve

The Edwards Sapien 3 Transcatheter Heart Valve is changing the world of aortic stenosis therapy. In 2016 the Sapien 3 received FDA approval for expanded use in the treatment of intermediate-risk patients. The valve has the highest survival rate ever reported in a TAVI clinical trial.

Personalized Medicine, Medical Devices, World Class Research

Industry

- Utah is proud to be home to companies like **Merit Medical Systems, BD (Becton Dickinson), Edwards Lifesciences, Varex Imaging, BioFire**, and many others. Utah is one of the top states in the nation for life science employment with an employee base of over 42,000 people.
- Just two of Utah's efforts to align education and industry are **Medical Innovations Pathway**, which provides high school students with opportunities in life science career paths, and **Utah Science Technology and Research (USTAR)**, which bolsters Utah's research strengths through commercializing technologies.
- Utah has a robust medical device manufacturing industry. Utah offers a world-class effort in arterial and vascular access devices, **producing 70% of all devices used worldwide.**

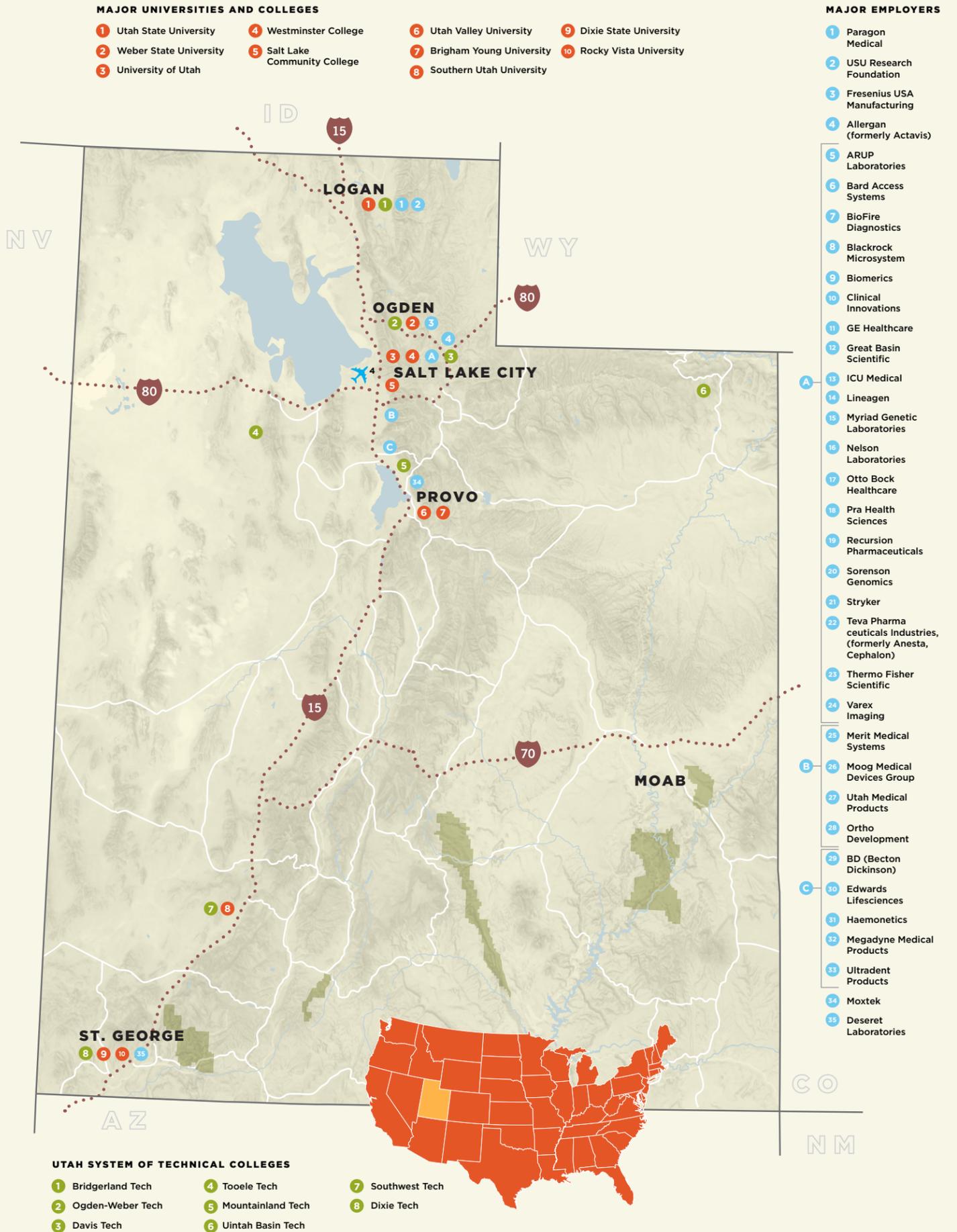
- In 2015, Utah's post-performance tax incentives facilitated nearly **25,000 new jobs and more than \$65M** in new state revenue.
- In 2018, the Tax Foundation ranked Utah's Total Tax Climate as the **8th best in the nation**. Since 2011, Utah has eliminated or modified nearly 400 business regulations to ease the burdens placed on businesses.

Workforce

- Utah has high employee concentrations in **medical equipment and supplies manufacturing, pharmaceutical and medicine manufacturing, biomedical engineers**, and many other life science related industries and occupations.
- There are a wealth of life science education resources in Utah, with **11 institutions offering programs related to life science**. Additionally, Utah has a medical, dental, pharmacy, and nursing school at the University of Utah.
- Utah has an abundance of medical device manufacturing companies with more than **10,000 people employed in the industry**. Utah has industry recognized expertise in medical device manufacturing.

Business Climate

- Forbes Magazine recognized Utah as **"The Best State for Business"** six of the past eight years, ranking 3rd in 2018.



Major Life Sciences Employers

COMPANY	EMPLOYEES*	DESCRIPTION
Allergan (formerly Actavis)	500-999 map #4	Allergan is focused on developing new medicines that address unmet medical needs in critical therapeutic areas, as well as increasing global access to high-quality, affordable medicines.
ARUP Laboratories	2000-2999 map #5	ARUP Laboratories is a national clinical and anatomic pathology reference laboratory and is a nonprofit enterprise of the University of Utah.
Bard Access Systems	250-499 map #6	Bard Access Systems manufactures and distributes medical devices for the purpose of delivering chemotherapy, blood products, antibiotics, drugs, and nutrition.
BD (Becton Dickinson)	1000-1999 map #29	BD (Becton Dickinson) manufactures and sells a broad range of medical supplies, devices, laboratory equipment and diagnostic products.
BioFire Diagnostics	1000-1999 map #7	BioFire Diagnostics provides infectious disease diagnostics and molecular solutions that lessen the time to medical results.
Biomerics	100-249 map #9	Biomerics is a contract manufacturer that specializes in the design, development, and production of medical devices for diagnostic and interventional procedures.
Blackrock Microsystem	20-49 map #8	Blackrock Microsystem is a privately held company that provides enabling tools for the neuroscience, neural engineering and neuroprosthetics research and clinical community worldwide.
Clinical Innovations	100-249 map #10	Clinical Innovations is the largest healthcare manufacturer exclusively focused on labor and delivery.
Deseret Laboratories	100-249 map #35	Deseret Laboratories provides production facilities from which to deliver agglomeration, instatization, blending, tableting, hard shell encapsulation, coating, bottling, liquid filling, powder filling, packeting, vertical form and fill pouching.
Edwards Lifesciences	1000-1999 map #30	Edwards Lifesciences is a global leader in the science of heart valves and hemodynamic monitoring.
Fresenius USA Manufacturing	1000-1999 map #3	Fresenius USA Manufacturing offers specialty pharmacy and laboratory services, as well as manufactures and distributes dialysis equipment, disposable products, and renal pharmaceuticals.
GE Healthcare	500-999 map #11	GE Healthcare provides expertise in medical imaging, medical diagnostics, patient monitoring systems, drug discovery, biopharmaceutical manufacturing technologies, and other services.
Great Basin Scientific	100-249 map #12	Great Basin Scientific is a molecular diagnostics company whos mission is to accurately diagnose, reduce misdiagnoses, and limit the spread of infectious disease.
Haemonetics	100-249 map #31	Haemonetics portfolio of devices, information management, and consulting services offers blood management for each facet of the blood supply chain—from plasma and blood collectors to hospitals.
ICU Medical	250-499 map #13	ICU Medical offers needle-free vascular access devices, custom infusion sets, closed system hazardous drug handling devices and systems, and other products and services.
Lineagen	50-99 map #14	Lineagen provides genetic testing, counseling, and developmental screening to aid in the clinical evaluation of children with autism spectrum disorder (ASD) or other forms of developmental delay.

*SOURCE: Utah Department of Workforce Services



Edwards Lifesciences delivery system for Intuity Elite Rapid Deployment Valve



GE Healthcare PET / CT scanner



COMPANY	EMPLOYEES*	DESCRIPTION
Megadyne Medical Products	50-99 map #32	Megadyne Medical Products develops and manufactures electrosurgical equipment and tools to meet the needs of the medical industry.
Merit Medical Systems	1000-1999 map #25	Merit Medical Systems is engaged in the development, manufacturing, and distribution of disposable medical devices used in interventional and diagnostic procedures.
Moog Medical Devices Group	100-249 map #26	Moog Medical Devices designs and develops advanced infusion systems that improve medication safety, optimize application performance, and reduce medical expenses.
Moxtek	100-249 map #34	Moxtek is a supplier of advanced nano-optical and X-ray components for display electronics, imaging and analytical instrumentation.
Myriad Genetic Laboratories	500-999 map #15	Myriad Genetic Laboratories develops and markets molecular diagnostic tests that address pressing clinical needs across multiple medical specialties.
Nelson Laboratories	500-999 map #16	Nelson Laboratories provides full, life-cycle microbiology testing services for the medical devices, pharmaceutical, tissue, and natural products industries.
Ortho Development	100-249 map #28	Ortho Development designs and manufactures implants and surgical instruments for knee and hip replacement, trauma fracture repair, and spine treatment.
Otto Bock Healthcare	250-499 map #17	Otto Bock Healthcare manufactures prostheses, braces and orthoses, children's wheelchairs, cushions, and accessories.
Paragon Medical	100-249 map #1	Paragon Medical is a supplier for cases and trays, surgical instruments, implantable components, and design and development services to the medical device marketplace.
Pra Health Sciences	100-249 map #18	Pra Health Sciences specializes in clinical research, therapeutic expertise, biosimilars, bioanalytical laboratories, rare disease, and oncology.
Recursion Pharmaceuticals	100-249 map #19	Recursion Pharmaceuticals combines artificial intelligence and automation to conduct experimental biology at scale.
Sorenson Genomics	20-49 map #20	Sorenson Genomics is an independent, nationally and internationally accredited Human Genomics DNA Testing Laboratory.
Stryker	100-249 map #21	Stryker offers a diverse array of products and services in orthopaedics, medical, surgical, neurotechnology, and spine that help improve patient and hospital outcomes.
Teva Pharmaceuticals Industries	250-499 map #22	Teva Pharmaceuticals develops, produces, and markets affordable generic drugs as well as innovative and specialty pharmaceuticals and active pharmaceutical ingredients.
Thermo Fisher Scientific	500-999 map #23	Thermo Fisher Scientific provides innovative analytical instruments, lab equipment, and specialty diagnostics that provide rapid and accurate results.
Ultradent Products	1000-1999 map #33	Ultradent Products develops, manufactures, and markets a full range of dental products to meet the needs of the dental industry.
USU Research Foundation	500-999 map #2	USU Research Foundation is a nonprofit organization whose mission is to bridge the gap between conceptual research and its development and deployment.
Utah Medical Products	100-249 map #27	Utah Medical Products produces medical devices for blood pressure monitoring and blood collection and a variety of other medical needs.
Varex Imaging	500-999 map #24	Varex Imaging is the world's largest independent supplier of medical x-ray tubes and image processing products.

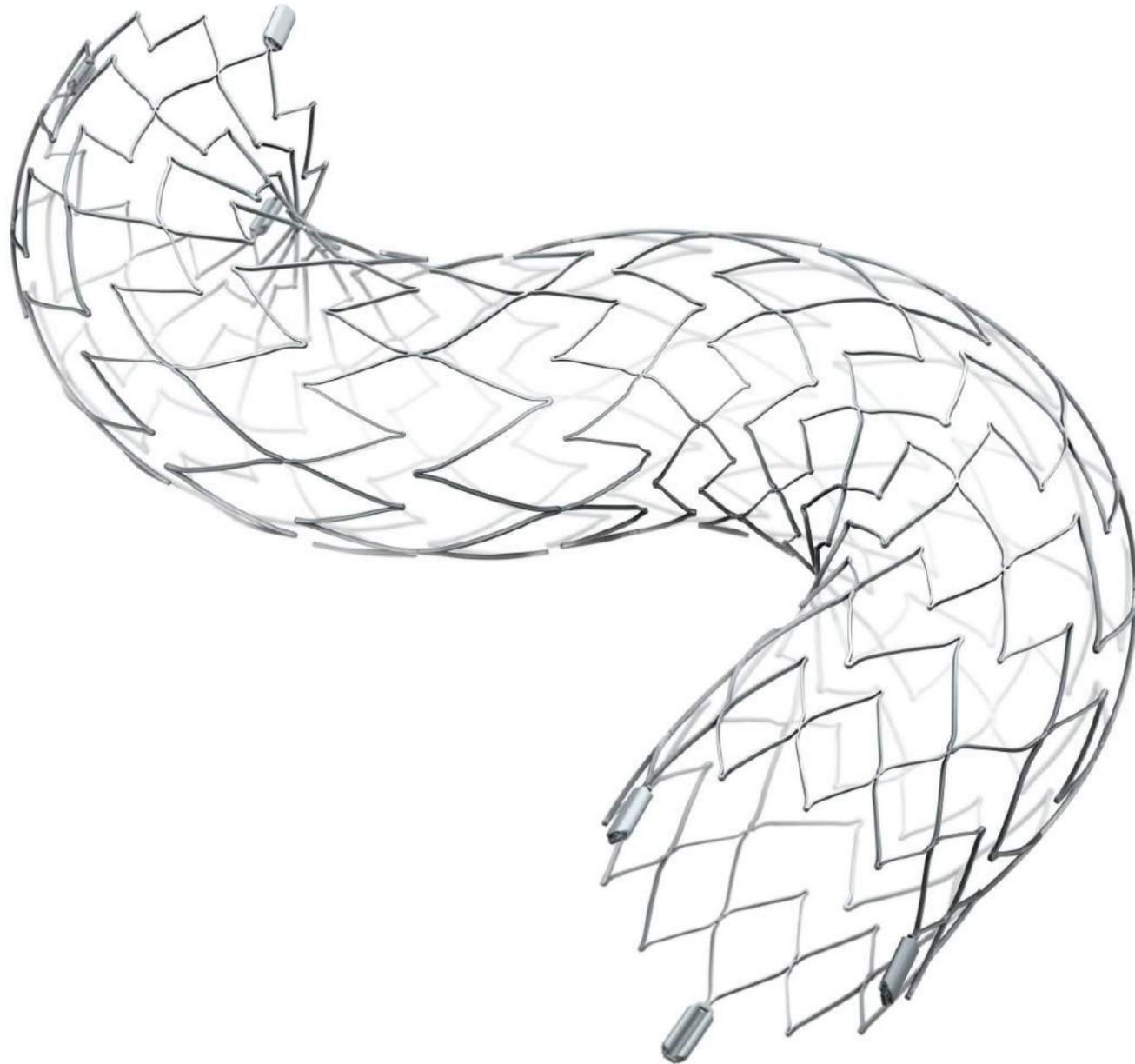
*SOURCE: Utah Department of Workforce Services



Ortho Development's BKS TriMax knee replacement.



Recent Announcements



Stryker's Neuroform EZ Stent System is engineered for consistent conformability, flexibility, and accessibility.

Utah Startup PolarityTE Expands within the State (2018)

PolarityTE is a biotech startup in Salt Lake City that invented an innovative stem cell mixture that helps the healing and regeneration of skin for burn victims. Their product, called SkinTE, is being tested by use on patients at more than a dozen hospitals around the country. Their expansion could bring up to 1,000 new jobs and over \$50 million in capital investment.

Stryker Announces Plans for Future Growth in Utah (2017)

Stryker announced plans to expand in the state of Utah, adding up to 540 jobs, \$16.9 million in new state revenue, and an estimated \$100 million in capital investment. The company's current location in Salt Lake City manufactures neurovascular products, and the expansion will increase the product portfolio to include orthopedic, spinal, and endoscopy product manufacturing. The expansion will also increase research and development operations, employing many engineers, and will host a medical device physician training and certification program.

Utah's Medical Innovation Pathways Expands (2017)

Governor Gery R. Herbert announced the expansion of the Utah Medical Innovation Pathways program. The expansion is to include an additional four school districts. The program equips high school students with the science, engineering, and technology skills necessary for a career in life sciences fields.

Biomerics Announces New Corporate Headquarters in Salt Lake City (2017)

Biomerics, a leading medical device manufacturer for the cardiovascular market, announced it will relocate to a new corporate headquarters in Salt Lake City. The 230,000 square foot facility will be located in the International Center west of the Salt Lake City International Airport. Biomerics expects to invest \$38.5 Million in the expansion over the next eight years and to add over 380 new jobs.

Nelson Laboratories acquired by Sterigenics International (2016)

"This is a significant strategic acquisition to help build out Sterigenics' lab testing and service capabilities on a global scale, enabling us to better serve our multinational customers," said Michael Mulhern, chief executive officer of Sterigenics International. "We will continue to explore additional expansion opportunities for our lab services to meet our customers' growing needs."

University of Utah Breaks Ground on New Science Center (2016)

The University of Utah President David W. Pershing and College of Science Dean Henry S. White hosted a groundbreaking ceremony for the construction of the Gary and Ann Crocker Science Center. The Crocker Science Center will house the Center for Cell and Genome Science, the Center for Science and Math Education, modern classrooms and laboratories for interdisciplinary science and math education and a technology-incubator space.

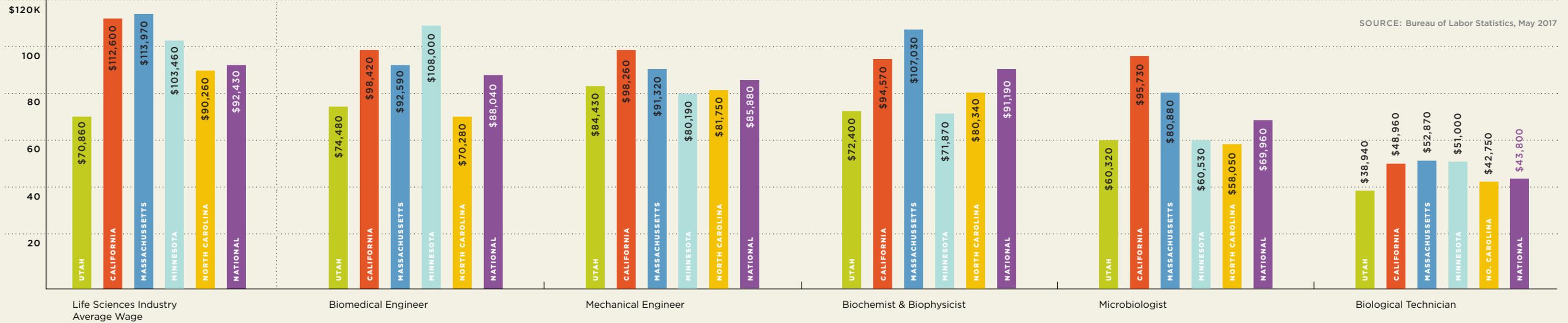
USTAR Launches Technology Acceleration Program (2016)

The Utah Science Technology and Research Initiative (USTAR) announced its pre-seed funding program, the Technology Acceleration Program (TAP), which is intended to support science and technology development in Utah. TAP will provide funding to Utah-based science and technology start-ups and early stage companies with the purpose of accelerating science and technology companies to market entry or to mature a new technology within an existing company.

Cost Profile

Occupational Wages in Life Sciences

SOURCE: Bureau of Labor Statistics, May 2017



Other Comparative Wages in Life Sciences

OCCUPATION	UTAH	CALIFORNIA	MASSACHUSETTS	MINNESOTA	NORTH CAROLINA	NATIONAL
Industrial Production Manager	\$87,270	\$106,460	\$114,740	\$96,890	\$99,360	\$100,580
Chemical Engineer	\$89,300	\$98,410	\$95,370	\$82,970	\$93,770	\$102,160
Chemist	\$65,450	\$79,520	\$87,140	\$78,980	\$72,320	\$74,740
Chemical Technicians	\$41,590	\$43,370	\$54,490	\$47,630	\$48,440	\$47,280
Clinical Lab Technologists & Technicians	\$44,220	\$55,000	\$57,680	\$55,070	\$48,740	\$51,770
Chemical Equipment Operators & Tenders	\$38,680	\$46,530	\$52,050	\$39,590	\$47,370	\$47,800
Medical Appliance Technicians	\$36,120	\$40,150	\$43,910	\$34,010	\$38,7020	\$37,190

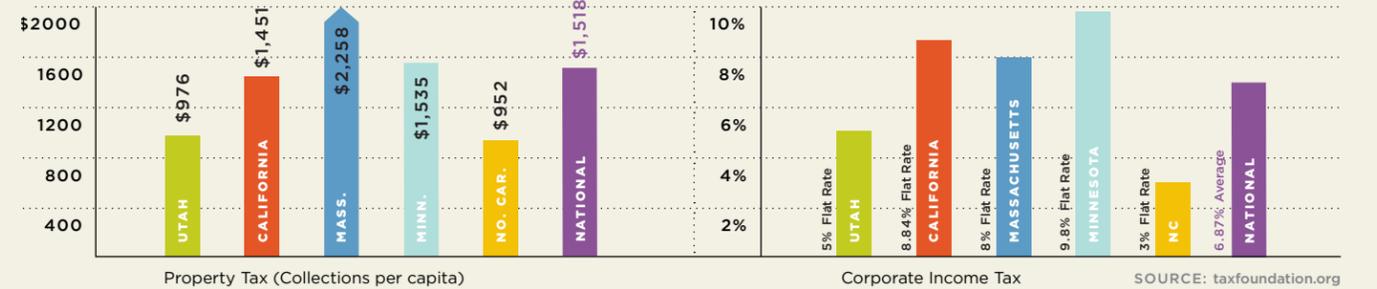
Real Estate



Utilities



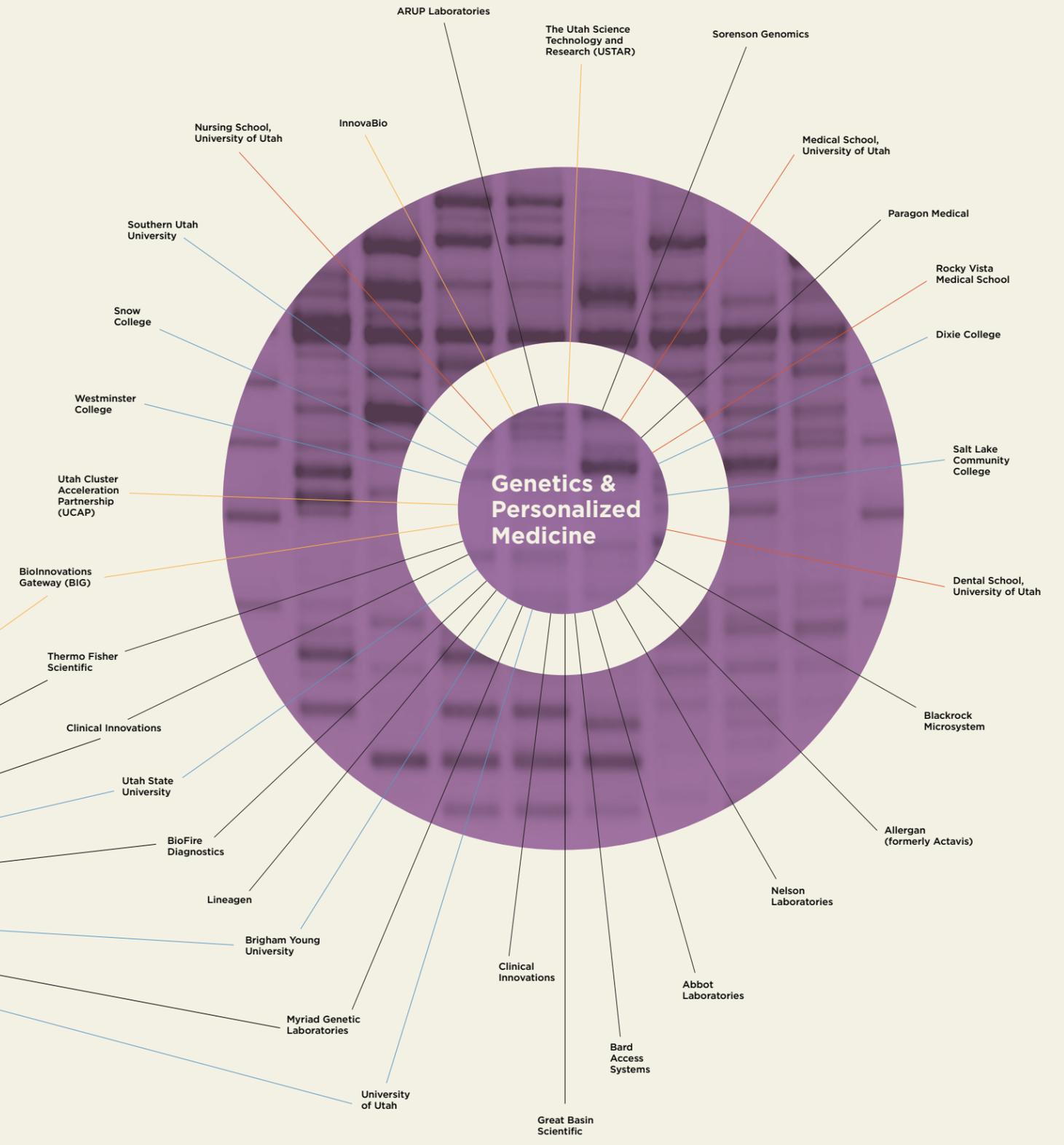
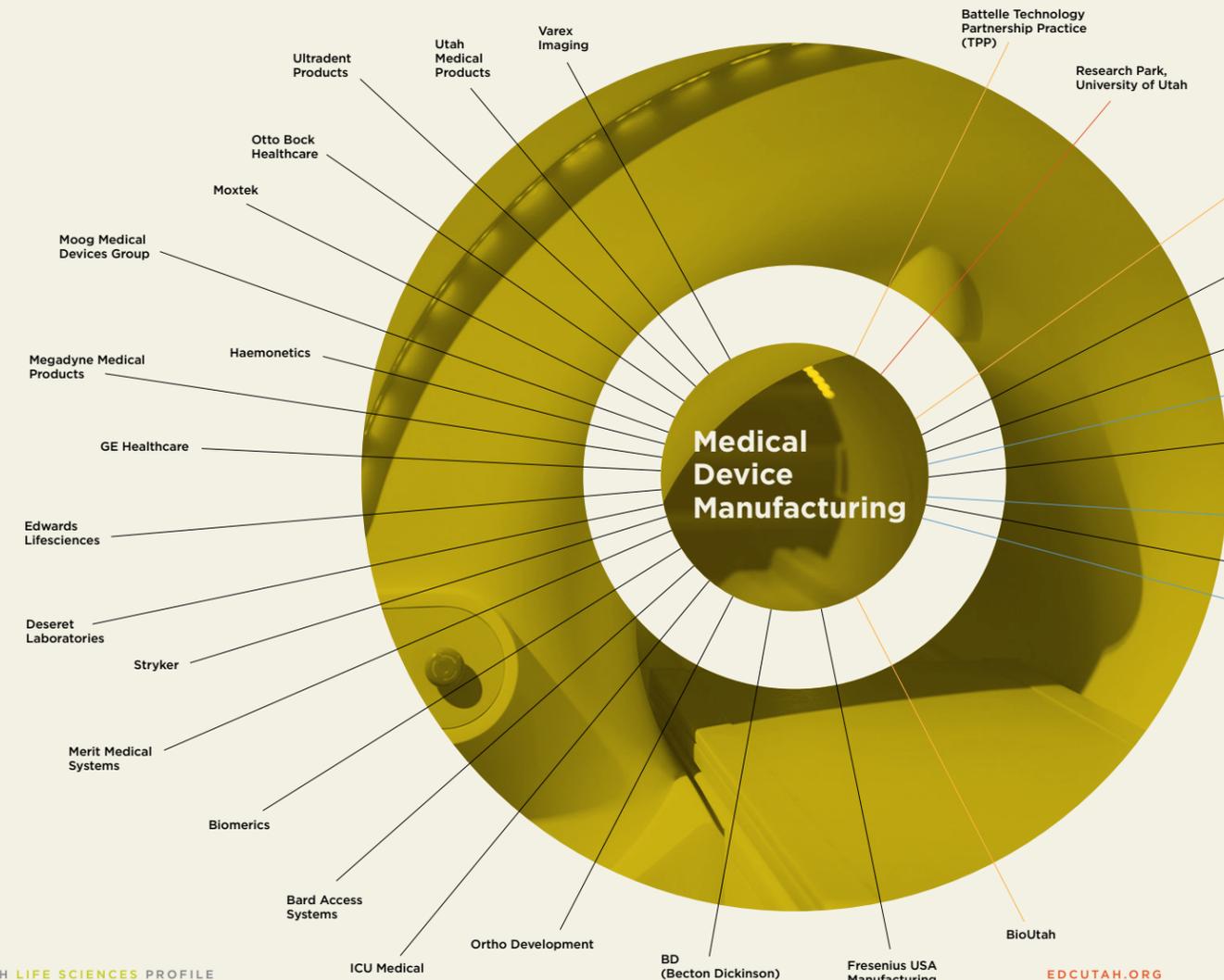
Taxes



Areas of Excellence

“Areas of Excellence” are industry sub-sectors in which Utah has a competitive advantage due to our infrastructure, trained workforce, historical expertise, and community support. The diagram below shows the collaboration and interrelationship of Utah’s business accelerators, educational institutions, government initiatives, and companies within the life sciences industry.

- 1 **BioUtah** is a trade association serving the life science industry to enable success and advance innovation for life science companies in Utah.
- 2 **The Utah Cluster Acceleration Partnership (UCAP)** program provides funding to public educational institutions to develop, implement or enhance educational programs that are responsive to regional and statewide industry needs.
- 3 **Battelle Technology Partnership Practice (TPP)** has been involved in analyzing Utah’s life science industry and research and development base to identify gaps in the state’s life science infrastructure and facilitate the development of strategies and actions.
- 4 **BioInnovations Gateway (BiG)** is an educational institution and workforce training facility that provides access to laboratories, machines, office space, and resources for high school students and entrepreneurs.
- 5 **The Utah Science Technology and Research (USTAR’s)** objective is to bolster Utah’s research strengths and significantly increase technology commercialization to create many more high caliber jobs throughout the state.
- 6 **InnovaBio** provides a training environment for high school and college interns to learn about careers in Life Science and get experience working in a lab.

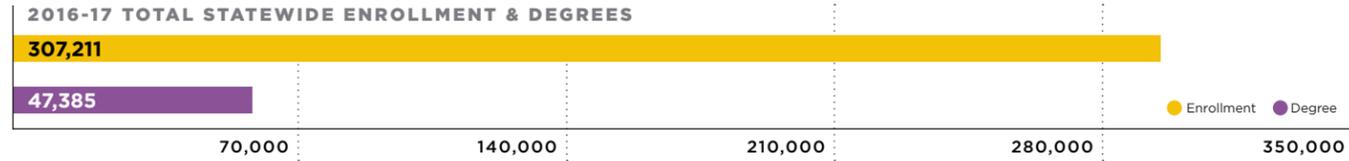


LINE KEY			
Companies	Accelerators	Infrastructure	Educational Institutions

Education & Labor

A State of Education

Utah is home to **12 major colleges and universities** and has an excellent talent pipeline of over **307,000** students. Bachelor's and graduate awards grew by **30.8% over the last five years**. Utah has an educated workforce, with over 91% of the population 25 or over with a high school diploma and over 32% with a bachelor's degree.



SOURCE: Utah System of Higher Education

TOP THREE INSTITUTIONS WITH LIFE SCIENCE-RELATED DEGREES

State of Utah

DEGREE: Medical Innovations Pathway



The Medical Innovations Pathway program provides high school students with the skills required to create career opportunities within Utah's life sciences industry. Students receive certifications in programs related to medical devices and equipment as well as research, testing, and medical labs.

Brigham Young University

DEGREE: Genetics, Genomics, and Biotechnology



Students who major in Genetics, Genomics, and Biotechnology follow one of four tracks. Each track includes a comprehensive core of genetics, biology, and chemistry courses. The tracks include Biomedical Genetics, Bio-Business, Plant Genetics & Biotechnology, and Microbial Genetics & Biotechnology.

University of Utah

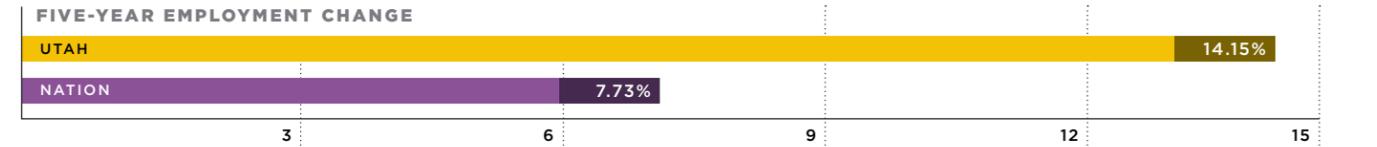
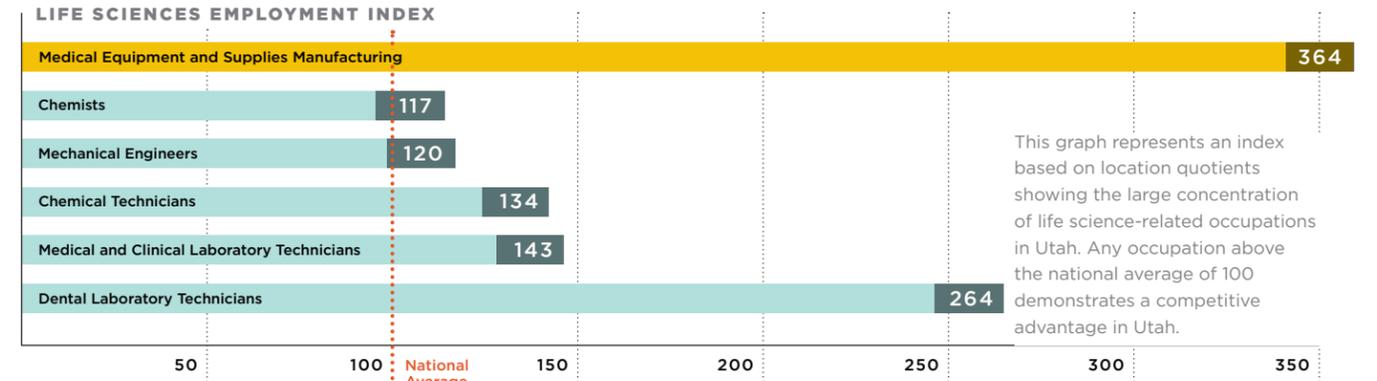
DEGREE: Medical Laboratory Science



The Medical Laboratory Sciences division includes two baccalaureate and one master of science degree programs, including a BS in Medical Laboratory Sciences, BS in Cytotechnology, and Master of Science in Laboratory Medicine and Biomedical Science.

The Labor Picture

Utah's labor force is well educated, growing, and affordable. Utah **created nearly 40,000 jobs in 2017**, and maintained one of the highest job growth rate in the nation throughout the year. Utah is the youngest state in the nation with a median age of 30.7, and has an average wage of \$46,068, which is **15% lower than the national average**.



SOURCE: Bureau of Labor Statistics

University of Utah Health Care is the Intermountain West's only academic health care system, combining excellence in patient care, the latest in medical research and teaching to provide leading-edge medicine in a caring and personal setting. The system provides care for Utahns and residents of five surrounding states in a referral area encompassing more than 10% of the continental United States.





EDCUTah questions?
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Have questions about the Life Sciences industry in Utah?
Call us at 1-800-574-8824.
