

KANSAS

DATA BOOK 2017

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Technology, Innovation & Entrepreneurship

For decades, Kansas has been committed to the development of a comprehensive network to support research, facilitate commercialization and to promote the adoption of new technologies in the state. This is evidenced in a myriad of ways, from our ongoing Statewide Broadband Initiative to the work our state's universities are doing to partner with businesses and commercialize cutting edge research and technology. The state has a variety of tools to support and promote new technology for companies, whether they are in the early stages of their business or more mature in their operations.

Support for Innovation & Technology

In today's rapidly moving technology economy, entrepreneurs and companies must work quickly to develop technologies before the commercial window of opportunity closes. Innovation Growth Program has the expertise and resources to help speed up the development process and turn innovative ideas into marketable products.

The Program was created on July 1, 2011 as a partnership between the Kansas Department of Commerce and the statewide network of organizations that were part of the network operated by the former Kansas Technology Enterprise Corporation. While the program exists to help entrepreneurs and companies, its ultimate goal is to bring new technology jobs to the state of Kansas.

Innovation Growth Partners provide a range of services that help accelerate the success of innovative technology companies. These services range from preparing entrepreneurs to approach capital partners to forming joint ventures and new companies around technologies and expertise housed at state universities. The partners, independent 501(c) 3 non-profit corporations, are partnerships between Innovation Growth Program, the community and/or the local research university. The partners are linked to regional angel networks and most have local pre-seed capital funds:

- Bioscience Technology and Business Center (BTBC), Lawrence
- Kansas State University Institute for Commercialization (KSUIC), Manhattan
- Wichita Technology Corporation, Wichita

In addition to access to seed capital, the Innovation Growth Program provides business assistance through a network of affiliate organizations. Services include business planning, strategic business development, investor networking, grant and loan application assistance, technical review, market research, intellectual property management and assistance with business negotiations.

Additional entrepreneurial resources are also available to Kansas companies. Resources included are for SBIR programs, inventors, small businesses and entrepreneurs.

Venture Capital & Angel Networks

There are several regional networks of venture capital and angel investors dedicated to identifying and funding promising start-up business opportunities in Kansas.

Kansas Angel Tax Credits

Kansas income tax credits are available to individuals who provide seed-capital financing for emerging Kansas businesses engaged in development, implementation and commercialization of innovative technologies, products and services.

Network Kansas

NetWork Kansas is devoted to the growth of entrepreneurship and small businesses throughout the state of Kansas. Backed by more than 500 resource partners statewide, the NetWork Kansas service promotes an entrepreneurial environment by connecting entrepreneurs and small business owners with the expertise, education and economic resources they need in order to succeed.

The Kansas Capital Multiplier Fund is a program that provides matching funds through NetWork Kansas partners to eligible businesses in communities across Kansas. These are low-interest matching loan funds of up to nine percent of private investment in a project. Private investment includes new bank loans, lines of credit, and equity investment.

In addition, through the Kansas Capital Multiplier Venture Fund, businesses can apply for matching equity of up to nine percent of the private venture capital invested. Private equity invested includes funds invested by private equity firms and angel investors. Businesses eligible include technology and bioscience companies who are working with university entrepreneurial centers, university centers of excellence, and/or the Kansas Bioscience Authority.

Entrepreneurs and existing small businesses access the Kansas Capital Multiplier Funds by working closely with local or regional financial institutions, NetWork Kansas partners, and angel investment networks.

NetWork Kansas

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Research and Development at Post-Secondary Institutions

The Kansas Legislature provided \$130 million in financing for four major research facilities at Kansas universities: a Food Safety and Security Research Facility at Kansas State University, a Biomedical Research Facility at the University of Kansas Medical Center, equipment for the Biosciences Research Building at the University of Kansas and expansion of the Aviation Engineering Complex at Wichita State University. In addition, the Legislature authorized \$13 million for improvements to the National Institute for Aviation Research at Wichita State University. The National Center for Aviation Training, is a 225,000 square-foot training facility built with the Wichita Area Technical College, Sedgwick County and others to support the large aviation cluster in that region of the state.

Wichita Area Technical College

National Center for Aviation Training

The National Center for Aviation Training (NCAT) combines the state's industry experience and expertise with innovative instructional techniques, producing a new standard for education. NCAT was originally established to meet aviation manufacturing workforce demand in Wichita. Offering 13 different certification and degree programs with the latest technology trends transferred from the National Institute for Aviation Research, the students receive optimum exposure to the most advanced capabilities and techniques.

Program development includes:

- Aerostructures
- Aerospace Fiber Optics and Data Cable Installation
- Applied Science of Aviation Interiors
- Aviation Maintenance Technology
- CAD/CAM: CATIA/ENOVIA
- Nondestructive Testing
- Aerospace Coatings and Paint Technology
- Aerospace Quality Control
- Applied Science of Aviation Manufacturing
- Avionics Technology
- Composites Technology

Fort Hays State University

Fort Hays State University offers a Bachelor of Technology Studies with a Concentration in Manufacturing Technology. The curriculum provides students with the concepts and skills needed for success in manufacturing, and business skills needed for effective leadership in the manufacturing industry. In addition to industrial technology, coursework in the concentration includes hands-on learning in the areas of material processes, machine tool operations, robotics, fluid systems, computer-aided manufacturing & maintenance/repair of equipment.

Center for Applied Technology and Sculpture

The Center for Applied Technology and Sculpture is opening in the fall of 2017. The technology center hosts the following labs:

- Computer-aided Design
- Science Technology Engineering Mathematics
- Metalworking
- Power & Energy
- Construction Management
- Metal Foundry Studio
- Instructional & Graphics
- Woodworking
- Plastics
- Robotics
- Sculpture

Kansas State University

The Advanced Manufacturing Institute

The Advanced Manufacturing Institute's (AMI) purpose is to improve manufacturing by developing new manufacturing technologies and working with manufacturers to implement new technologies. AMI also manages the Manufacturing Learning Center, a product and processes prototyping center established to assist manufacturers in developing new products and upgrading production systems for existing products. AMI has been named by the Great Lakes Wind Network (GLWN) as a Center of Excellence to expand the wind industry supply chain in Kansas. AMI will provide site assessments for manufacturers wishing to enter the wind industry supply chain; make recommendations on possible components to be supplied; and assess manufacturers' overall production systems. This effort will result in a resource directory of supply chain companies to serve the wind industry. Also, the partnership with GLWN will enable companies that have met suitable criteria to participate in the GLWN Wind Alert System, which informs potential suppliers that an original equipment manufacturer or high-level supplier is sourcing a specific component that they are capable of producing.

Polytechnic

Kansas State Polytechnic has the second ranked unmanned aircraft systems (UAS) program in the nation. The Applied Aviation Research Center (AARC) hosts 100 UAS projects annually in co-operation with federal agencies, private sponsors and internal university groups. These projects range from validating the standards for the Federal Aviation Administration to power infrastructure inspection & mapping of natural resources.

Bulk Solids Innovation Center

The Bulk Solids Innovation Center is used to study and develop the understanding of bulk solids material handling. This in turn enhances the businesses that use these materials or manufacture the systems that convey, store and dispense them. Dry Bulk Solids Materials are used in chemical, food, pharmaceutical and plastic sectors. The center has a Material Properties Test Lab that allows for bulk solid and particle properties to be evaluated and modeled in a test bench environment, as well as Full-Scale Bulk Solids Test Bay.

The Full-Scale Bulk Solids Test Bay is capable of analyzing:

- Vacuum and Pressure Dilute Phase
- Vacuum and Pressure Vessel Dense Phase
- Batch Weighing
- Gravity Flow
- Feeding
- Vacuum Sequencing
- Rotary Valve Dense Phase
- Silo Zone Blender
- Air Filtration
- Mixing and Silo Storage

University of Kansas

The Information and Telecommunication Technology Center

The Information and Telecommunication Technology Center (ITTC) develops technologies and advances knowledge in the areas of information technology, telecommunications, radar systems and remote sensing. ITTC excels in basic research, technology development and technology transfer through the support of the Department of Commerce, private industry and federal and state programs. Existing companies collaborate with ITTC for research and development, realizing that targeted research reduces costs and improves service to consumers. Fledgling companies seeking to develop new technologies draw on the expertise of faculty, staff and students.

Intelligent Systems & Automation Lab

The Intelligent Systems & Automation Lab (ISA) encompasses programs and projects involved with the application of microprocessors and sensors to advanced electromechanical systems. The labs provide students with lessons in computer integrated manufacturing, industrial innovation and augmented telerobotics. All involve technology transfer to regional industry through cooperative efforts involving personnel, financing resources and expertise from the laboratory, industry and government.

Kansas University Transportation Center

The Kansas University Transportation Center (KUTC) conducts, coordinates, and promotes transportation research, training and technology transfer. It is a multidisciplinary center that encompasses several research and technology transfer programs. Primary areas of interest are

- Highway engineering and maintenance
- Workforce development
- Traffic engineering and safety
- Community transit

Pittsburg State University

Kansas Polymer Research Center

The Kansas Polymer Research Center (KPRC) specializes in vegetable oil-based polymer research and development. KPRC scientists work with industrial partners, state and federal agencies, and producer associations on developing and commercializing PSU's intellectual property.

The center is capable of researching:

- Adhesives
- Coatings
- Pre-polymers
- Solvents & Composites
- Bioplastics
- Foams
- Polymeric Oil

Kansas Technology Center

The Kansas Technology Center (KTC) was designed around flexibility, transformability and ease of movement of materials and equipment. The building is a lab for teaching about utility systems, construction and other technologies. Students are provided hands-on learning opportunities within 70 technical laboratories.

Wichita State University

National Institute for Aviation Research

The National Institute for Aviation Research (NIAR) supports the aviation industry through research and development, testing, certification and technology transfer. The center, which includes 15 research and testing laboratories, provides state-of-the-art equipment, investigators and administrative support to clients in private industry and state and federal government agencies.

Installments at NIAR

Center of Excellence for Composites and Advanced Materials (CECAM) was established to provide the nation with a center for the validation and quality assurance of composites and advanced materials to be applied in the construction of the aircraft through:

- Research, testing, certification and technology transfer
- Coordination and cooperation with the FAA, aircraft manufacturers, materials suppliers and airline companies
- Education of the aircraft manufacturing and maintenance workforces

National Center for Advanced Materials Performance (NCAMP) implements a continuous approach to FAA and NASA material qualifications by allowing material suppliers and interested aircraft original equipment manufacturers to test, qualify and create databases for new materials.

Benefit to Aircraft Manufacturers

- Manufacturers can pull a system from the NCAMP database, prove equivalency and gain FAA certification in a quicker and cheaper manner than a typical qualification approach.

Benefit to Materials Suppliers

- Material Suppliers can work with NCAMP to qualify material systems without having to be linked to an ongoing aircraft certification program. This allows market suppliers to have the material out into the market via a public forum with generated allowable and the FAA certification.

Robotics and Automation Laboratory supports local and national industry test and automate systems and processes. The lab is capable to operate as a full scale integrator of robotics and automation components, as well as simply prove the concept of automation within processes. The lab is equipped 40 various sized robots and seven different brands.

Center of Innovation for Biomaterials in Orthopaedic Research (CIBOR) researches and develops the potential use of composite materials in bioscience and medical applications including the manufacturing of orthopaedic implants.

Special Help for Manufacturers

The Mid-America Manufacturing Technology Center strives to improve the competitive position of small and mid-sized Kansas manufacturers by helping them grow revenues, improve productivity and expand their capacity.

The Mid-America Manufacturing Technology Center (MAMTC), a non-profit subsidiary of the Innovation Growth Program, assists manufacturers by improving productivity, quality and sales, as well as by reducing costs. MAMTC is a manufacturing extension center sponsored by the National Institute of Standards and Technology with field engineers that cover the entire state. While MAMTC's specialty is hands-on technical consultation, other services include the following:

- Seminars and workshops
- Vendor and technical information searches
- Equipment and software demonstrations
- Customized training
- LEAN manufacturing
- Assessments and ISO 9000 pre-audits
- Industry networking groups
- Assistance in locating new facilities or expansion of existing facilities

BioKansas

BioKansas is a not-for-profit organization serving the bioscience interests in Kansas. Across the human, plant, animal and industrial biosciences, BioKansas is focused on enhancing the business and research climate and working with leaders across the state to attract and retain bioscience talent, companies and funding.

From Kansas City to Hays, Manhattan to Wichita, and Atchison to Garden City, BioKansas represents the bioscience continuum from the university laboratories to the established pharmaceutical, animal health and crop science companies, and all the entrepreneurial ventures, start-ups and service providers in the heart of the continuum.

BioKansas was founded in 2004 to unify Kansas' bioscience industry, academic research institutions and economic development organizations.

BioKansas is a state affiliate organization of the Biotechnology Industry Organization (BIO). BIO is a national organization representing more than 1,000 biotechnology companies, academic institutions, state biotechnology centers and related organizations in all 50 U.S. states and 33 other nations. BioKansas enjoys the benefits of membership in BIO as well as the Council of State Bioscience Affiliates.

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