

HIGH-TECHNOLOGY BUSINESS

IN

LAWRENCE, KANSAS

November 1986

Prepared by

THE INSTITUTE FOR PUBLIC POLICY AND BUSINESS RESEARCH  
at  
The University of Kansas

in cooperation with  
City of Lawrence  
Douglas County  
Lawrence Chamber of Commerce

Report No. 113

## FOREWARD

Lawrence has grown steadily the past few years. An integral part of that growth has occurred in small high-technology business. This directory is an attempt to recognize and encourage the new, rapidly expanding high-technology area. The directory will assist the growth of these companies by providing information about their products and services.

The University of Kansas has been a catalyst in attracting some of these new firms to our community. In other instances, the University of Kansas has assisted growth and expansion of existing businesses with technical advice and technology transfer. I would like to continue and strengthen this type of University-City cooperation.

The companies listed account for approximately 800 jobs in the Lawrence area. Many have plans for expansion and growth as new products come to market. I want to thank these companies for choosing Lawrence as a place to do business and hope that Lawrence and the University of Kansas can continue to provide the assistance and support conducive to prosperous business development.

Sandra K. Praeger  
Mayor of Lawrence

## PREFACE

This report contains information on businesses in Lawrence that have been identified as high-technology enterprises. The following criteria were used to differentiate high-tech companies:

1. a high proportion of scientists and engineers in the workforce;
2. highly sophisticated technology incorporated into products;
3. firms of relatively small size with high growth rates and a high ratio of research and development expenditures to sales; and
4. products which tend to incorporate technological innovation, have a high degree of value-added, and are often recognized as "state of the art" in a given line.

The second section of the directory contains a listing of laboratories at the University of Kansas that may be useful as resources for testing or consulting. Many work regularly with businesses in the state and surrounding areas.

Many sources were used for this information including newspapers, Chamber of Commerce, telephone and manufacturing directories, development agencies, and primarily, reports from businesses themselves. Special thanks are owed to all of those who shared information. Every effort has been made to include all the firms in the area. Please report any errors or omissions to the Institute for Public Policy and Business Research, Catherine Shenoy, University of Kansas, Lawrence, Kansas 66045, as we hope to update this report annually. Additional copies of this report will be available through the Lawrence Chamber of Commerce, 209 W. 8th Street, Lawrence, Kansas 66044.

## MANUFACTURING

Applied Microwave Corporation  
Route 6, Box 205A  
Lawrence, Kansas 66046

(913) 749-3511

Owners: David R. Brunfeldt (President), M. Craig Dobson, F.T. Ulaby, Dennis Anderson

Annual Sales: \$300,000

Original equipment manufacturer of microwave systems. Active Radar Calibrator: used with civilian and military radars to provide a simulated radar target which is calibrated. Scafferometer: precision radar for the measurement of radar reflectivity from a variety of natural and cultural targets. Dielectric Probe: device for measuring the dielectric (insulative) properties of materials at microwave frequencies. Founded in 1983.

Kantronics, Inc.  
1202 East 23rd Street  
Lawrence, Kansas 66046

(913) 842-7745

Owner: Philip N. Anderson (President)

Annual Sales: \$1.2 million

Electronics manufacturing. Manufacture high-speed radio modems for commercial and amateur use. Founded in 1971.

## MANUFACTURING

King Radio Corporation (Subsidiary of Allied-Bendix Aerospace)  
2920 Haskell  
Lawrence, Kansas 66044 (913) 842-0402

Owner: Allied-Signal Corporation, Morristown, New Jersey.  
Fred Wenninger (President - KRC)

Annual Sales: \$120 million (KRC only)

Avionics and business communications. Two primary types of electronics:

- (1) avionics for general aviation
- (2) transceivers for the land mobile service.

Founded in 1959. KRC headquarters is in Olathe, Kansas with other plants in Ottawa and Paola, Kansas.

Kohlman Systems Research, Inc.  
319 Perry Street  
Lawrence, Kansas 66044 (913) 843-4099

Owner: Privately held corporation.

David L. Kohlman (President)

Instrumentation Manufacturing, aeronautical engineering, airplane flight testing. Manufacture computerized flight test data acquisition systems; perform contract flight testing services; perform aeronautical engineering consulting. Founded in 1982.

Vice President/Flight Test-William G. Schweikhard; Vice President Systems Development-Ronald Renz; Executive Vice President/Finance & Administration-Paul A. Baker.

**MANUFACTURING**

Optical Technology Corporation  
515 E. 22nd Terrace  
Lawrence, Kansas 66046

(913) 841-8939

Owners: Dr. Neil Minkin (President) and Dr. Bonnie L. Minkin

Manufacturing/product development of infant vision tester - only commercially available ophthalmic instrument capable of measuring visual acuity in infants, small children and other non-verbal individuals. Founded in 1984.

Signalcrafters, Inc.  
P.O. Box 3406  
Lawrence, Kansas 66046-0406

(913) 841-7556

Owner: David L. Fayman (President)

Electronic manufacturing. Measuring instruments for power transmission systems. Founded in 1976.

## SOFTWARE & SYSTEMS

Bulgren and Burnett, Inc.  
P.O. Box 1072  
719 Massachusetts  
Lawrence, Kansas 66044

(913) 842-7585

Owners: Peggy Burnett (President), Bill Bulgren

Computer software and programming. Professional services related to computer software including high-quality programming, software design, analysis, quality control and testing, and database customization. Regularly-scheduled programming and support services also available. Founded in 1981.

Several of the professional staff members also faculty at the University of Kansas Computer Science Department.

Data Anilas, Ltd.  
3220 Mesa Way - Suite A  
Lawrence, Kansas 66044

(913) 843-8171

Owner: Thomas E. Darnell (President)

Development, installation and support of integrated office automation computer systems. Services include system design, system integration, software development, system installation, system training, system repair, and after market support. Founded in 1976.

SOFTWARE & SYSTEMS

Foresight Resources Corporation  
932 Massachusetts  
Lawrence, Kansas 66044 (913) 841-1121

Owners: Private corporation owned primarily by founders and employees. August Grasis (President)

Graphics software development and marketing. Drafix(TM), Foresight's primary product, is a computer-aided-design/drafting (CADD) software for IBM PC's and compatibles. It is sold as a productivity tool to engineers, architects and other technical professionals. Founded in July of 1984. Vice Presidents: Dr. Larry Pfortmiller, Dan Watkins, August Grasis III.

Foresight Solutions, Inc.  
804 New Hampshire Street  
Lawrence, Kansas 66044 (913) 842-7526

Owners: Myles Schachter (President) and Rhonda Ross

Annual Sales: \$2 million

Computer/software supplier. Major supplier of microcomputer systems to city, county and state government. Software products include park and recreation scheduling, fund accounting, fleet management and CAD systems. Computers include those by NCR, Sperry, IBM, and Leading Edge. Founded in 1982.

Affiliated with Computer Outlet - retail computer sales.

SOFTWARE & SYSTEMS

Miracle Computing  
313 Clayton Court  
Lawrence, Kansas 66044

(913) 843-5863

Owner: Richard E. Elliott (President)

Software house. Sells vertical market software, consulting work, and installation and training of systems. Founded in 1980.

Preventive Measures, Inc.  
1115 West Campus Road  
Lawrence, Kansas 66044

(913) 842-5078

Owners: Allan N. Press (President) and Lynn B. Osterkamp

Health-related computer software. Computerized stress assessments. Stress management book. Consulting. Founded in 1984.

SOFTWARE & SYSTEMS

Quire Industries, Ltd.  
P.O. Box 3247  
Lawrence, Kansas 66046-0247

(913) 842-7797

Owner: Steven J. Pipia (President)

Annual Sales: Over \$600,000

Market computer security products. Security products that prevent access to computers, both internally and externally. Founded in 1985.

Affiliated with Quest IV Industries, Ltd. - a marketing company and Lawrence Wood Works, Inc.

Sentry Systems, Inc.  
708 W. Ninth Street  
Lawrence, Kansas 66044

(913) 749-7472

Owner: Steven J. Schwartz (President)

Electronic research and development - microcomputer peripherals. STOPLOCK(tm), Series of micro security products: Stoplock I, Im, IIr, III, IV,IVp, IVd. Founded in 1983. (predecessor firm, SDI, Inc.)

## SOFTWARE & SYSTEMS

BehaviorTech, Inc.  
100 E. 9th Street  
Lawrence, Kansas 66044

(913) 843-6583

Owner: Privately owned company. Gerald K. Beckman (President)

Computer-based training systems. Microcomputer-based course generator. Custom course development services. BehaviorTech computer-based training courses utilize artificial intelligence to tailor the author's content to each student's learning requirements. Founded in 1985.

## TELECOMMUNICATIONS

Centron Production, Inc.  
1621 West 9th Street, Box 687  
Lawrence, Kansas 66044

(913) 843-0400

Owner: Robert T. Kohl (President)

Film and video production. Provide creative and technical production services in 16mm film and video tape for business and industry, government, associations, and educational institutions, including script writing, photography, editing, art and animation, sound recording and mixing. Founded in 1947.

## TELECOMMUNICATIONS

Connex International  
947 Massachusetts  
Lawrence, Kansas 66044

(913) 749-9500

Owner: Susan G. Pereyra (President)

Audio teleconferencing service. Provide meetings by telephone for customers who range from Fortune 500 companies to nonprofit and educational institutions. Founded in 1982.

Systems Technology/Applied Research (STAR) Corporation  
600 Lawrence Ave., Suite 2D  
P.O. Box 3385  
Lawrence, Kansas 66046-0385

(913) 841-1283

Owners: K. Sam Shanmugan (President), Julian Holtzman, Victor Frost, Edward Komp

Research and development in software development, communications, computer networks and related disciplines. Founded in 1977.

## INFORMATION

Ergosyst Associates, Inc. and The Report Store  
910 Massachusetts Street, Suite 503  
Lawrence, Kansas 66044-2975 (913) 842-7334

Owner: Privately held corporation.

John L. Burch (President)

Publishing and information services. Publisher and multidisciplinary information resource company. Works published by The Report Store address the following subjects: human factors/ergonomics, artificial intelligence, VDT health & safety issues, office automation, interactive computer display design. Founded in 1982.

## PHARMACEUTICAL & BIOLOGICAL

INTERx Research Corporation (Subsidiary of Merck & Co., Inc.)  
2201 West 21st Street  
Lawrence, Kansas 66046 (913) 841-1700

Owner: Merck & Co., Inc., A.J. Repta (President)

Pharmaceutical research. Controlled release and delivery of drugs. Part of Merck Sharp & Dohme Research Laboratories. Founded in 1972.

PHARMACEUTICAL & BIOLOGICAL

IPRX, Inc  
P. O. Box 610  
Lawrence, Kansas 66044

(913) 841-6619

Owner: Stock-owned. Dr. Takeru Higuchi (President)

Pharmaceutical research laboratory. Research in dermal products. Founded in 1985.

Oread Laboratories, Inc.  
2065 Constant Avenue  
Lawrence, Kansas 66046

(913) 749-0034

Owners: Kansas registered stock holders. Howard E. Mossberg, Ph.D. (President)

Annual Sales: none anticipated until 1987-88.

Analytical services and research laboratory. Specializes in ultra-sensitive analysis of interest to the emerging bio-technology industries in the health, food, and environmental project fields. Founded in 1983.

## AVIATION

Kohlman Aviation Corporation  
319 Perry Street  
Lawrence, Kansas 66044

(913) 843-4098

Owners: David L. Kohlman (President) and Linda Kolhman

Annual Sales: \$500,000

Engineering consulting and sales. Aeronautical engineering consulting, ice protection systems for aircraft, expert witness services, accident investigation. Founded in 1977.

## SPECIALIZED CONSULTING

Hall-Kimbrell Environmental Services, Inc.  
4840 West 15th Street, P.O. Box 307  
Lawrence, Kansas 66044

(913) 749-2381

Owner: W. David Kimbrell (President)

Annual Sales: \$1.5 Million

Environmental consulting firm. Environmental engineering services.

SPECIALIZED CONSULTING

MacKenzie and Company, Inc.  
700 Massachusetts Street, Third Floor  
P.O. Box 1118  
Lawrence, Kansas 66044

(913) 749-1006

Owners: Kenneth D. MacKenzie, Jack Whitaker (President) and Clo Whitaker

Research-based management consulting and software development for our technology. Specializes in designing organizations to be more productive and adaptive. Also, developing and marketing organizational support software (OSS) for firms. Founded in 1976 (predecessor was Organizational Systems, Inc.; MacKenzie, Inc. in 1983).

Plan to open office in Kansas City, fall of 1986. Stream of software products and services under development.

## KANSAS UNIVERSITY RESEARCH ORGANIZATIONS

*The following non-commercial laboratories and research centers provide basic and applied research in areas of interest to high-technology businesses. Many work closely with individual firms or industries to provide technology transfer. To contact those listed include in the address: University of Kansas, Lawrence, Kansas 66045.*

### **Building Environmental Systems and Construction Engineering Laboratories**

Ronald Helms, 210 Snow, 864-3434

Analysis and design of buildings - including lighting (interior, exterior, and daylighting), electrical power, heating, ventilation, and air-conditioning, solar, and construction management. Computer applications to engineered systems are developed to solve building systems design needs.

### **Center for Bioanalytical Research**

Theodore Kuwana, 104 McCollum Research Laboratory, 864-3096

Detection and the determination of various bioactive species in biological and environmental matrices. Designated as the University of Kansas Center for Excellence for the purpose of enhancing research and development in areas of high technology.

### **Center for Biomedical Research**

Ronald Borchardt, 3006 Malott, 864-4820

Established as an administrative unit responsible for furthering the University's contributions to biomedical research. Studies focus on the biological mechanisms of disease; metabolism of drugs in the body; and design, synthesis and delivery of chemotherapeutic agents to treat such ailments as glaucoma, hypertension, viral and bacterial infestations, cancer and mental illness.

#### **Center for Research, Inc.**

Carl Locke, 343 Nichols, 864-3441

Nonprofit organization develops and administers sponsored research in engineering and related areas.

#### **Computer Integrated Manufacturing Laboratory**

Bill Barr, 256 Nichols, 864-3181

Research on the rule and knowledge base for robotic handling and automated fixturing in a workstation for metal removing operations. Two robots and a computer-controlled machining station are used for process planning for a factory of the future.

#### **Computational Mechanics Laboratory**

Donald Gyrogo, 3013 Learned, 864-3181

Computational mechanics research and development in solid mechanics, structural mechanics, fluid mechanics, system dynamics and control, and thermal sciences.

#### **Energy Analysis and Diagnostic Center**

Louis Burmeister, 3014 Learned, 864-3181

Conducts industrial energy conservation audits and analyses for small to medium-size companies in eastern Kansas, western Missouri and nearby portions of Nebraska and Iowa.

#### **Environmental Health Program**

Ross McKinney, 5007 Learned, 864-3731

Research on air pollution control, solid waste management, water pollution control, water quality, and resource management. Emphasis on anaerobic biological treatment concepts and acid dust widely used on Kansas fields and trihalomethane formation in surface and ground waters.

### **Flight Research Laboratory**

David Downing, 135 Nichols, 864-3043

Optimum aerodynamic design and control of vehicles ranging from spacecraft and supersonic jets to transport aircraft. The laboratory's facilities consist of three wind tunnels, a shock tube, an instrumentation lab, two airplanes, and a modern flight test and propulsion test facility.

### **Industrial Innovation Laboratory**

Bill Barr, 256 Nichols, 864-3181

Develop and test both hardware and software packages of microcomputer-based systems. Application of microprocessors, microcomputers and other integrated circuits to mechanical systems. It can create new products and processes and improve productivity. Laboratory personnel apply advanced NASA technology, including robotics and expert systems, to projects in cooperation with regional industry.

### **Institute for Experimental & Applied Ecology**

. Kenneth Armitage, 3004 Haworth 864-4255

Stimulate, coordinate, and facilitate interdisciplinary research which effectively utilizes the resources inherent in the 1650 acres of land comprising the Kansas Ecological Reserves.

### **Institute for Public Policy and Business Research**

Anthony Redwood, 607 Blake Hall, 864-3701

Applied, Kansas-oriented research for state and local governments, the state business community, and other private organizations in the areas of business, public policy, and economics.

#### **Auxiliary State Data Center**

Receives and/or accesses most major census publications for Kansas and neighboring states, and collects and maintains other various state and national data sources. Makes census information available to the public. Function of IPPBR.

#### **Survey Research Lab**

Conducts surveys for state and local governments and private organizations to determine public opinions on proposed policies and legislation and for needs assessment studies. Function of IPPBR.

### **Isotope Geochemistry Laboratory**

W.R. Van Schmus, Marion Bickford, 356 Nichols, 864-3675

Equipped with two solid-source mass-spectrometers plus clean chemical lab facilities to determine abundance and isotopic composition of Rb, Sr, U and Pb and other suitable elements. Provides isotopic age determinations for private industrial use.

### **Kansas Applied Remote Sensing**

Edwin Martinko, 240 Nichols, 864-4775

Assists Kansas agencies and private industry to better utilize satellite and airborne remote sensing systems. Actively engaged in training and technology transfer activities focused on dissemination of information regarding the potential for utilization of remote sensing/geographic information systems technologies.

### **Kansas Biological Survey**

Edwin Martinko, 240 Nichols, 864-4775

Purpose: (1) to gather, by field census and other means, information on the kinds, distribution, and abundance of plants and animals (other than domesticated kinds); (2) to compile, analyze, and interpret this information; and (3) to make the information readily available through reports and publications.

### **Kansas Geological Survey**

William Hambleton, 305 Moore Hall, 864-3965

Conducts research in the earth sciences. Research is undertaken in water, energy, minerals, and land use, and includes the development of new analytical techniques and better methods for handling and displaying geological data. The survey is not a regulatory agency; instead, it provides information on resources and problems, allowing individuals and agencies to make well-informed decisions.

### **Kansas University Transportation Center**

Joe Lee, 2011 Learned, 864-3787

Transportation research and coordination of transportation-related teaching on campus. Latest equipment for collecting traffic data available for loan. Basic experiments on pavements and pavement material conducted in Pavement Materials Laboratory.

### **Kurata Thermodynamics Laboratory**

Colin Howat, Campus West, 864-3860

Applied thermodynamic projects including experimental and computer modeling of natural gas reservoirs, experimental and design studies to optimize production at synthetic rubber plants, computer modeling of operating sequences at petrochemical plants to determine optimum performance for operations and designs, and more classic studies of thermodynamic mixtures.

### **Mineral Resources Institute**

Carl Locke, 343 Nichols, 864-3441

Research in engineering and geology on the identification and exploitation of mineral resources in Kansas and the nation.

### **Radiation Physics Laboratory**

Edward Zeller, Gisela Dreschhoff, 154 Nichols, 864-4516

Evaluates radioactive mineral resources and radioactive materials disposal.

### **Radar Systems and Remote Sensing Laboratory**

Richard Moore, 208 Nichols, 864-4832

Develops radar systems for various purposes. Evaluates novel radar systems, especially for space applications, and researches microwave sensing of the earth's surface and atmosphere.

### **Sculpture Research Center**

Eldon Tafft, 353 Art & Design Building, 864-5529

Research and development of sculpture techniques and processes.

### **Small Business Development Center**

Michael Fragale, 864-3536

Provides comprehensive management and technical assistance to small businesses in Kansas.

### Space Technology Center

Bill Barr, 256 Nichols, 864-4775

Research and education in space-related science and technology.

### Structural Engineering and Materials Laboratory

David Darwin, 2208 Learned, 864-3826

Research in the areas of structural analysis and design, structural engineering materials, and fracture and fatigue of metals and metallic structures. Several specialized components form the SEML - 1) static and servo-hydraulic test equipment for large scale structural testing; 2) hydraulic and mechanical testing machines with static load capabilities up to 200,000 pounds; 3) an electron microscope facility with both transmissions and scanning electron microscopes; 4) concrete laboratory equipped to run standard tests on cement, aggregates, and concrete; and 5) stress analysis of structures and mechanical systems subjected to various types of loading.

### Telecommunications and Information Sciences Laboratory (TISL)

Sam Shanmugan, 224 Nichols, 864-4832

Computer-aided modeling, analysis, and simulation of new designs for communication systems, including telephone, satellite, optical fiber, and microwave systems. Laboratory facilities are also used for signal processing, image simulation, and computer-aided design of integrated circuits.

### Tertiary Oil Recovery Program

Don Green and Paul Willhite, 4008 Learned, 864-3001

Research and development in new technologies for the recovery of oil in the state and dissemination of information about these technologies to the Kansas oil industry.

### Water Resources Institute

Ernest Pogge, 1039 Learned, 964-3807

Water resources research and water resources education.