

MINUTES OF THE HOUSE NEW ECONOMY COMMITTEE.

The meeting was called to order by Chairperson Bill Mason at 3:39 p.m. on February 19, 2002 in Room 522-S of the Capitol.

All members were present except:
Representative Kuether

Committee staff present:

April Holman, Research
Bob Nugent, Revisor
Rena Jefferies, Revisor
Rose Marie Glatt, Secretary

Conferees appearing before the committee:

Jim Dahmen, Chairman of the Board, KTEC
Beth Brough, Vice President of Academic and Government Programs at KTEC
Matt McClorey, Vice President of Business Development and Portfolio Management
Bill Jarrell, Regional Director of Government Relations for The Boeing Company

Others attending:

See attached list

Representative Beggs moved, seconded by Representative Cox that the February 5, 2002 minutes be approved. The motion carried.

Jim Dahmen, Chairman of the Board for KTEC, introduced staff members in attendance, Beth Brough, Vice President of Academic and Government Programs, Matt McClorey, Vice President of Business Development and Portfolio Management, Lori Rost, Director of Finance and Allen Weis, Director of Information Technology. He provided information on efforts being made to replace Rich Bendis, who has resigned and taken employment in Pennsylvania. They received over one hundred inquires, have interviewed four applicants and are in the process of doing the final background checks before they offer employment. They hope to have someone to present to the Committee by the middle of March.

He provided information on the background, philosophy and its network partners (Attachment 1). The Board of Directors considers the preservation and enhancement of KTEC's assets through prudent investment management to be of paramount importance. They realized early that in a rapidly changing world, they must be able to remain flexible enough to respond to unique challenges, ideas and projects, yet fulfill the broad vision of the Legislature. KTEC remains true to its legislative mandate and its responsibility.

Beth Brough, Vice President of Academic and Government Programs, gave a power point presentation on the Annual Report Data for 2001 with emphasis on the investment ratios (Attachment 2). She stated that since 1984 their cumulative results have been \$3.4 dollars to every state dollar, with improvement on that ratio in recent years to \$5.5:1 ratio for 2001.

Matt McClury described the three services provided by KTEC for start-up companies, 1. Research and Development Resources, 2. Risk Capital Resources and 3. Investment & Business Assistance. Other handouts included *KTEC, At a Glance*, and *The Power of 5 - Kansas Centers of Excellence* (Attachment 3). Copies of *Selected KTEC Activity in Counties* represented by Committee Members were distributed to each member (Attachment 3)

In conclusion Jim Dahmen stated that the current economic development structure has worked well and they recommend that the present structure remain. They look forward to the lifting of the EDIF cap providing additional resources to sustain their future effectiveness.

Discussion followed regarding KTEC's projects and their funding sources in various Committee Member's counties. In response to requests, KTEC's staff agreed to provide specific information on (1) a project in Wyandotte County, regarding the Kansas City public school USD #500 for Representative

CONTINUATION SHEET

Long, and (2) the status of the projects listed in the Manhattan area from 1988 forward for Representative Osborne.

Bill Jarrell, Regional Director of Government Relations for Boeing, provided an update on the request for aviation research funding for the WSU National Institute for Aviation Research (NIAR) (Attachment 4). He provided background on the funding request and clarified the differences between the requests from the Kansas Board of Regents and that of the Aviation Industry on a comparison chart.

Discussion followed regarding the projected wind tunnel in respect to supersonic testing needs. Mr. Jarrell described the current status of HB 2690 currently in Appropriations and HB 2925 regarding the EDIF funding. He described the time schemes regarding the projects over the next five years.

The next meeting is February 21 in Room 243.

The meeting adjourned at 4:25 p.m.

ECONOMIC DEVELOPMENT
COMMITTEE GUEST LIST

DATE: Feb 19, 2002

NAME	REPRESENTING
Bin Jarell	BOEING
Alan Weis	KTEC
Lou Rost	KTEC
Les Bough	KTEC
Matthew McClorey	KTEC
Jim Johnson	KTEC
Jim Patterson	SRS
Tom Blum	FIDOR
Carlos Alberto Plaza	Invem w/ Ray Cox

Testimony to the Senate Commerce & House New Economy Committees

*Jim Dahmen, Chairman of the KTEC Board
February 19, 2002*

KTEC was founded by the Kansas Legislature who collectively recognized by pooling EDIF resources, the state is better able to provide collateral, funds and services in order to invest in small, emerging technology startups and help them achieve their growth potential. KTEC is managed **independent of political cycles** by its own board of directors, President and business managers. We are fortunate to have strengthened KTEC in numerous ways. The directors are highly respected professionals in their fields including: University Professionals, PhDs, Legislators, Bankers, Real Estate Professionals, and Business Leaders.

The directors of KTEC believe the greatest return on public dollars spent, can be found in human potential. We have an unwavering confidence in the ability of entrepreneurs, with KTEC network support and assistance, to define their problems and implement appropriate solutions. These traits along with sufficient pre-seed, seed, and mezzanine capital, will play a critical role in carrying Kansas into the knowledge-based economy of the future.

KTEC continues to be an innovative, professional organization fostering a high quality business environment for individuals and communities throughout Kansas. Whether the past 15 years have brought fantastic growth or recession to Kansas, KTEC has continued to produce results. We have learned to be resourceful in meeting challenges and opportunities. We have increased our capacity to be a resource for competitive leadership among Kansas business, educational institutions, governmental units, non-profits and others.

A cornerstone of our KTEC philosophy is the pro marketing attitude shared by the KTEC team. This attitude enters into every facet of the operations, maintaining a team effort for achievement. We believe in control systems to monitor the pulse of our investments in research or growing companies. We have endeavored to be consistently responsive to the needs of clients in the KTEC network. We define, then improve the uniqueness of each project and then seek to elevate it from competitors, never forgetting to foster the entrepreneurial spirit in the business communities statewide and our university system.

KTEC and its network partners, continually conduct comprehensive reviews of its investment objective, asset protection and portfolio management. KTEC leverages education, technology and community resources for the benefit of Kansas citizens. As we can not emphasize enough that as the life-blood of the day-to-day business operations for startup technology companies is capital, we continually endeavor to maximize our investments in a diverse portfolio mix to incubate Kansas growth companies to produce increasing revenues, jobs and profits. With enhanced venture capital funds, a further diversification of portfolio investments would increase the probability of attaining the states investment objectives going forward.

NEW ECONOMY
2-19-02
ATTACHMENT 1

Because KTEC believes partnerships with education through technology development are critical for breaking the cycle of low income and strict dependence on the agricultural sector, we need to dedicate a larger percentage of resources toward projects addressing the educational/technology partnerships in place. One of the legislature's reasons for creating KTEC was to elevate the state's continuing concern for excellence in education by giving special focus to commercializing some of the research in those institutions. The move was also intended to more effectively propel Kansas into global competition through technology. KTEC partnership objectives are to seed mission-directed research in order to stimulate a favorable environment for technology training & education, business creation and jobs for graduates.

The Board of Directors considers the preservation and enhancement of KTEC's assets through prudent investment management to be of paramount importance. Fundamental to KTEC's approach is the belief that innovation is key to achieving lasting economic results in our communities. We realized early that in a rapidly changing world, we must be able to remain flexible enough to respond to unique challenges, ideas and projects that lie beyond its identified programs areas, yet would fulfill the broad vision of the Legislature. KTEC remains true to its legislative mandate and its responsibility to address the changing needs and concerns of the world in which we live.

.....

The current economic development structure has worked well. KTEC has been a valuable resource with consistent results. The agency's continued effectiveness hinges on its network and its independence as an entity. It is incumbent upon KTEC to provide:

- o A consistent competitive strategy statewide
- o Sustained capacity with all its investments
- o The level of business expertise, flexibility and responsiveness required by the very nature of emerging technologies

Such a level of support for an entrepreneurial culture in Kansas can only happen when KTEC is not subject to changes in the political environment that future cabinet members may bring. Moreover, the diversified expertise of the KTEC Board and the KTEC committees offer an integrated perspective that is also attuned to regional and local community interests. We recommend that the present structure remain, and we look to the lifting of the EDIF cap providing additional resources to sustain our future effectiveness.



FY 2001 Economic Results

- Annual Report Data shows excellent annual and cumulative results in:
 - Increased sales: \$53.6M
 - Company start-ups: 26
 - Jobs created or retained: 881
 - Technologies developed: 52
 - Patents issued: 19
 - Inventors assisted: 100
 - Royalties received: \$847,504
 - Equity returns: \$141, 200
- Total cumulative investment: state, industry, federal, venture capital:
**FY 2001 Ratio: \$5.5:1 versus
Cumulative: \$3.4:1 from 1984 to 2001**

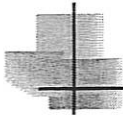
My name is Beth Brough and I am Vice President of Academic and Government Programs at KTEC.

You all have received a copy of our annual report that contains these results.

Every one of these criteria is significant for economic performance measurement, but today I am would like to hone in on the investment ratios.

Our cumulative results since 1984 have been \$3.4 dollars to every state dollar. I would like to note that we have been improving on that ratio in recent years with a \$5.5:1 ratio in FY2001.

NEW ECONOMY
2-19-02
ATTACHMENT 2



KANSAS NEEDS TO DO BETTER

Redwood-Krider Executive Report,

June, 1986, p. 7

12. To achieve a significant long-term improvement in the economic base, the state will need to make a large and sustained funding investment over the next decade to support a well-designed package of economic development initiatives. This will be necessary not only because the economic problem facing Kansas is a difficult one, but also because most other states are already making large investments in economic development and have been doing so for several years...

While the challenge facing Kansas is not an insurmountable one, it will be difficult, and it will require substantial investment. A strong commitment will be necessary in funding by the Legislature, in planning by the executive branch, and in cooperation by Kansas Organizations.

Yet, Kansas needs to do better.

We are all familiar with the 1986 Redwood-Krider challenges:

- for long-term, sustained investment
- support for a package of initiatives
- the level of competitiveness among other states
- the level of commitment required of all Kansans



KANSAS NEEDS TO DO BETTER

U.S. Department of Commerce, Office of Technology Policy
October, 2001

State business and government leaders can profoundly influence the success of America's high tech base...Decisions made at the local level play a critical role in establishing the environment needed to let innovators innovate and entrepreneurs create jobs, companies and wealth.

Recognizing the development of high tech economies requires certain enabling conditions and infrastructure—such as a strong R&D base, ready access to capital, world-class technical talent, and mature entrepreneurial networks—state leaders around the country are paying careful attention to high-tech clusters that have already emerged, looking to high tech centers of excellence such as Silicon Valley, Seattle, Austin and Pittsburgh for the “winning formula” to bring back to their own areas.

The US Dept. of Commerce reiterates these points today citing:

- that critical decisions are made locally for innovative/entrepreneurial environments
- the same winning formula is an R&D base, capital, world-class talent and a mature entrepreneurial network
- Excellent models are out there. The Rust Belt was the last to invest in the last economic era and today they are the first.
- Pittsburgh is cited as a high tech cluster model.



The Nature of the Competition: Aviation

- Wind Tunnel:
 - University of Washington
 - Texas A&M University
 - University of Maryland
 - NASA-Ames Research Ctr.
 - Microcraft
 - European Facilities
- Crash Sled:
 - Simula Inc.
 - Veridian Engineering
- Composites & Structures
 - Penn State
 - Georgia Tech
 - Delsen Testing Labs, Glendale, CA
 - Intec, Bothell, WA
- Boeing and Cessna partnered with Iowa State for an NSF/FAA Center for Nondestructive Evaluation

Competitiveness is the reason as to why we need to do better.

Let's get a quick glance at the competitive picture in Aviation. This slide shows multiple universities and entities competing with NIAR for the same services.

Even though proximity is a distinct advantage for Wichita, we do have to be mindful that the major aviation firms are national and international companies who will continue to invest elsewhere. This is integral to the diversification of their own research and service strategy.

One example is Boeing's and Cessna's investment in an Iowa State center for Nondestructive Evaluation.



"Defense Spending Flies Away as Plant Science Blooms"

St. Louis Post-Dispatch, October 31, 2001

- "The St. Louis area has successfully diversified away from defense in the last dozen years. Employment is much higher and unemployment lower, than it was in the 1980s when McDonnell Douglas employed 40,000 St. Louisans."
- "That's not to say we should give up on the defense industry, which accounts for about 1 in 14 jobs in metro St. Louis, down from 1 in 7 jobs in 1989."
- "While we still are very bullish on the advanced-manufacturing sector in general and on Boeing in particular, we absolutely see plant and life sciences as our window on the future." *—Richard Fleming, president of the Regional Chamber and Growth Association* ***upon the opening of the Donald Danforth Plant Science Center & the loss of Boeing's bid to build the Joint Strike Fighter.***

An article in the St. Louis Post-Dispatch describes how St. Louis has successfully diversified away from the defense industry over the last 12 years.

This article was printed in the same week that:

- Boeing lost its bid to build the Joint Strike Fighter and
- The Danforth Plant Science Center opened.

Yet, what is the impact on employment? Employment is much higher and unemployment lower than in the 1980s because...

Today 1 in 14 jobs are now defense industry driven versus the 1 in 7 jobs in 1989.

The Nature of Competition: Biotechnology

- 41 states report focusing on biotech (human and plant biosciences)
- 10 of these states have developed a biotech or life sciences strategic plan
- St. Louis, Columbus, Pittsburgh, San Antonio, Cincinnati, Peoria and Indianapolis are engaged in regional efforts.

State	States by Rank			
	Life Sciences R&D Exp.	Degrees	NIH Support	Biological Workforce
Missouri	12	18	12	17
Wisconsin	15	14	15	18
Colorado	20	20	16	22
Kansas	30	28	35	29
Oklahoma	34	32	38	34

The State of Missouri has increased its Life Sciences R&D expenditures by 519% from year 95-99, vs. 19% for the State of Kansas.

The NIH Support for the State of Missouri has increased 44% between 96-99, vs. 35% for Kansas.

Source: *State Government Initiatives in Biotechnology 2001*, prepared by Technology Partnership Practice, Battelle Memorial Institute & State Science and Technology Institute, September, 2001

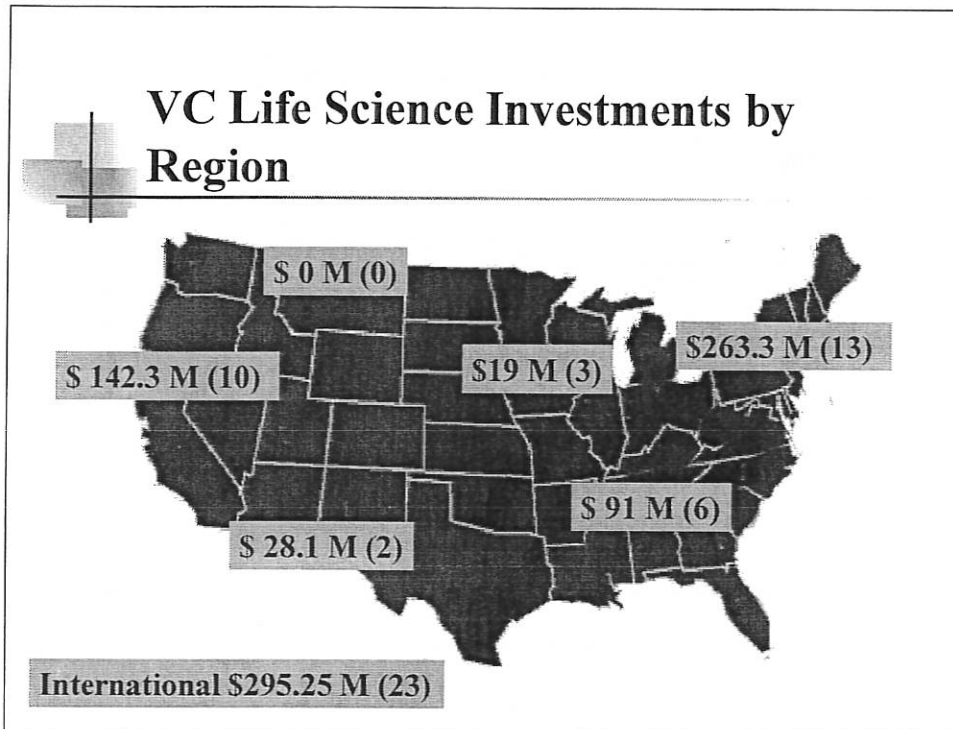
Kansas ranks fourth among Heartland neighbors participating in Biotechnology and below the middle among 41 states.

The recent report, State Government Initiatives in Biotechnology 2001, ranks all 41 states involved on four criteria:

R&D Expenditures and NIH funding are measures of research competitiveness while the workforce ranking refers to scientists in the year 2000.

Note the number of Rust Belt cities participating in regional efforts.

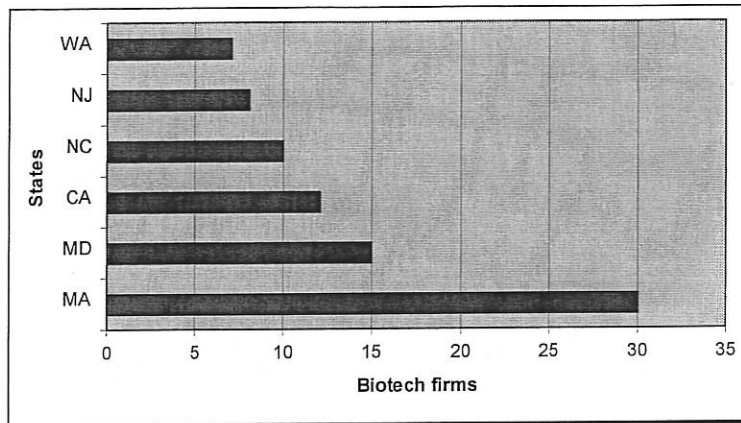
Note also the percentage increases in Missouri versus Kansas in the latter part of the 90s.



The next two graphics describe the regions where biotech venture capital is going.

As we are all aware, there is very little in the Heartland, with capital definitely concentrated on the coasts.

Venture Capital Investment in Biotech



Highest Concentration of Biotech firms per million population, by state

The leading six states in number of biotech firms per million of population are:
MA, MD, CA, NC, NJ, WA



WHAT DOES NSF EPSCoR SUPPORT?

*(National Science Foundation and the **Experimental Program to Stimulate Competitive Research**)*

“We do not support research, we support infrastructure.”

- Infrastructure is defined as the strengthening of a state’s ability to sustain the competitive capacity of its academic research and development.
- Value in a proposal submission is sought in the demonstrable commitment to work together, not the document itself.

Source: National Science Foundation (NSF) Representative

Let’s look at Kansas and research competitiveness.

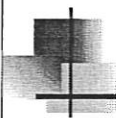
We are an EPSCoR state. EPSCoR is the Experimental Program to Stimulate Competitive Research.

We are one of 19 states that do NOT get their per capita share of the federal research dollar.

In fact, with 1% of the population, we get .5% of the dollars awarded by the National Science Foundation, one of the larger granting federal agencies.

EPSCoR proposals only compete with these 19 lower states. In other words, we are competing in the minor leagues.

What is NSF EPSCoR looking to support? They support infrastructure building for sustainability and competitiveness to create wealth.



*Productivity does not depend on **WHAT** industries a region competes in, but on **HOW** it competes."*

--Council on Competitiveness Study

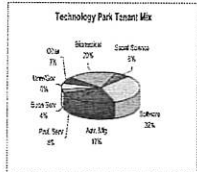
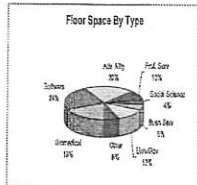
Therefore...

HOW we compete is key!

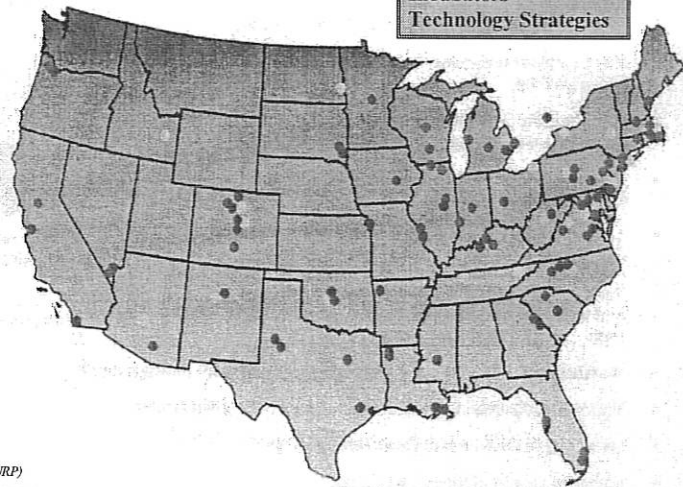
*Case Example:
The Work of One
Economic Development
Consultant*

As a case example of the national economic competitiveness picture, the map below shows the number and types of important project feasibility development strategies and continuing implementation assignments that have been completed by this one developer. They can provide important lessons for customizing the planning process according to the needs of the locality as well as optimizing research investments for universities and communities focusing on the technology-based economic development.

Legend:
Research Parks
Incubators
Technology Strategies



Source: Association of Research Parks (AURP)



This map depicts the work of one economic development consultant at the recent Association of University Research Park summit. The map legend shows research parks, incubators and technology strategies developed across the country in states with an eye on the competitive picture as well as an integrated strategic approach to infrastructure.



***The Blueprint: Seven Elements for Governors
& Legislatures to Strengthen for Economic
Growth***

Economic Growth is a PACKAGE OF INVESTMENTS

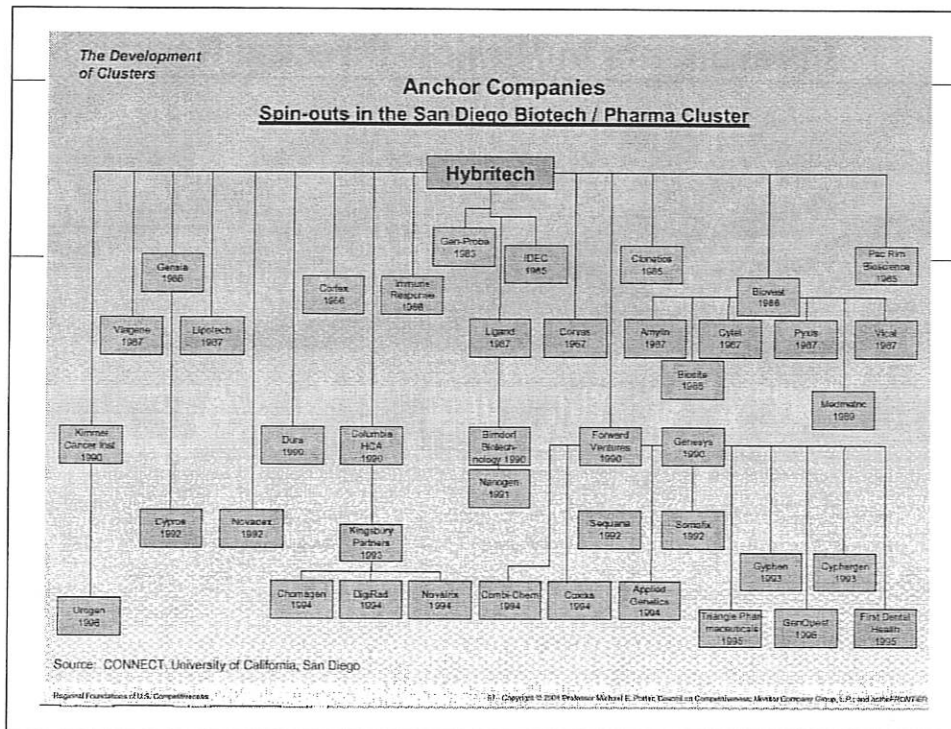
- Intellectual Infrastructure
- Physical Infrastructure
- Knowledge Spillovers to Catalytic Firms (Kent State example)
- Skilled Workforce (Economies based on ideas versus labor)
- Capital
- Entrepreneurial Culture (Experience with starting companies as a matter of routine)
- Quality of Life to Attract Human Capital

*State Science & Technology Institute Conference
Pittsburgh, PA, December, 2001*

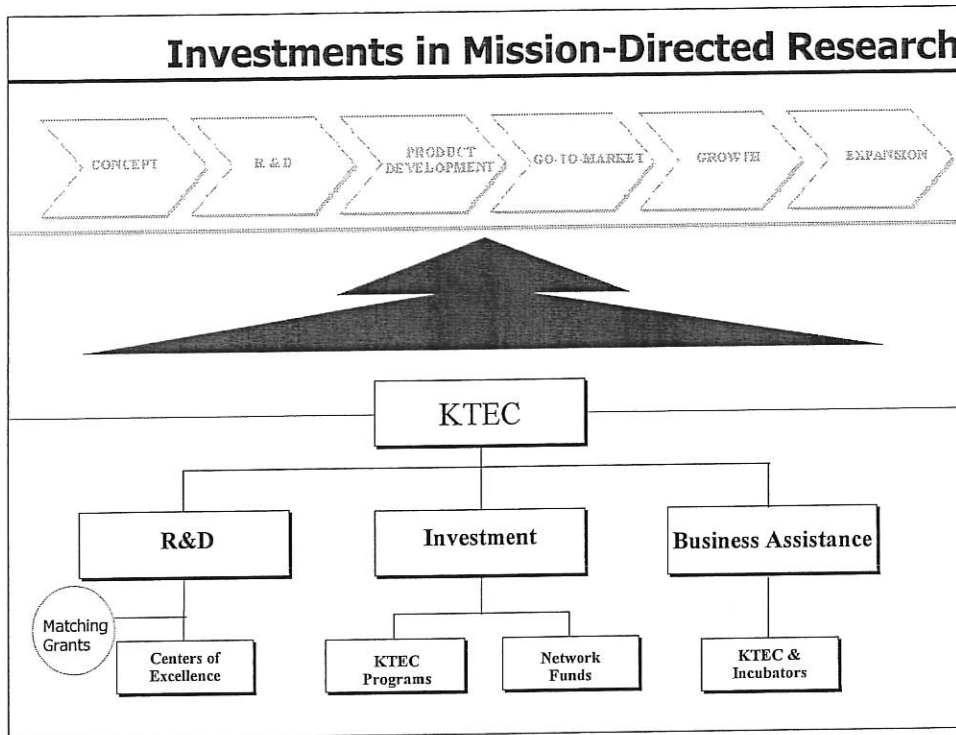
“The Blueprint,” therefore, is a package of investments.

In light of the Board of Regents sponsored HB 2690, it is important to emphasize the significance of catalytic firms to the commercialization of research.

Kent State is a university, top in LED crystals, that exports their technology outside the state due to the lack of catalytic firms nearby.



The San Diego Pharmaceutical Cluster is a good model. This is a diagram of the spin-off companies since 1983.



KTEC provides services in three areas:

- Research
- Investment
- Business Assistance

All support the technology life cycle that Matt will talk about later in greater detail.

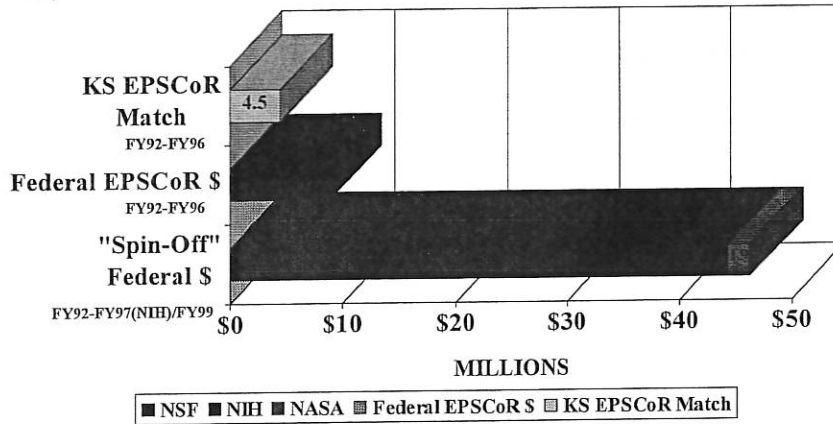


How KTEC Works: Research Case Studies in Collaboration and Leverage

I would like to give you some quick Kansas research case examples that exemplify the power of collaboration and leverage.

NSF EPSCoR "Spin-Off" Returns to Kansas

\$46.3 Million of Federal Monies for KS Statewide "Spin-Off" Research
Generated by the Original \$4.5M (State Match) and \$8.8M (Federal) Investment in NSF EPSCoR
Projects



Sources of Data: NSF EPSCoR, NSF, NIH & NASA
Note: Researchers are cluster PIs, Co-PIs and faculty supported in NSF EPSCoR FY1992-96

With the EPSCoR program, awards usually garner one federal dollar for every state matching dollar. Kansas scientists have generated \$46.3 million in "spin-off" projects for the initial state investment of \$4.5 million, 1992-1996.

STAR FUND AWARDS								
Fed. Award	Federal Award Amount	KTEC Investment	Ratio	University / Center	Lead Principal Investigator	Project Name / Description	Partnerships	Location
DOE/TADAC (Pending until Jan. 2002)	\$688,496	\$31,000	22:1	KSU - NGML	Dr. Kirby Chapman	Development of a Novel Gas-Fueled Engine Ignition System Coupling Pre-Chambers with Hypersonic Igniters	KSU, MACC, TADAC Patent	Manhattan
NIH/BRIN	\$5,998,986	\$50,000	120:1	KUMCRI	Dr. Joan Hunt	Kansas Biomedical Research Infrastructure Network (KBRIN)	KU, KSU, WSU, ESU, FHSU, Haskell Indian Univ, PSU, Washburn Univ.	Kansas City
NIH/COBRE	\$10,539,541	\$50,000	211:1	KUMCRI	Dr. Bill Narayan Dr. Joe Lutkenhaus	Novel Approaches to Controlling Microbial Pathogens	KUMCRI, KU, KSU	Kansas City
NSF/ITR	\$7,490,000	\$300,000	25:1	KU	Dr. S. Prasad Gogineni	Mobile Sensor Web for Polar Ice Sheet Measurements	EG&G, USA-CRREL, Jet Propulsion Lab., Univ. of Chicago, Univ. of Alaska, Ohio State Univ.	Lawrence
NSF/PFI	\$597,810	\$35,000	17:1	WSU	Dr. Dennis Signer	Innovation in Aircraft Manufacturing through System-Wide Virtual Reality Models and Curriculum Integration	Boeing, Delmia Corp., SME, Brittain, Cessna, Raytheon	Wichita
Potential Totals	\$25,314,833	\$466,000	54:1					
*Actual Award Totals	\$24,626,337	\$416,000	59:1					

An example of the greater leverage possible with increased competitiveness is the 59:1 federal to state leverage in the state's last four awards. These are the initial awards within the last six months. There is still "spin-off" potential.

What does it take to win greater federal leverage?

- Good source of ready match, investments in research as well as venture capital
- Infrastructure (pool of P.I.s, labs space, equipment, education outreach, proximity) to promote commercialization and create wealth.
- Strategic focus (strategic technologies), strategies to improve competitiveness
- Collaboration statewide, regionally and nationally; cross-disciplinary; multi-university (both research and non-research institutions), multi-sector, for success.
- Better planning to establish collaborations and for hiring that build the critical mass necessary to compete.
- More current faculty becoming competitive for research funding and graduating to larger grants.
- Priority setting for research & resource allocation (shared risk, leverage)
- Performance measurement and accountability for return on investment
- Goals in education for graduate students and junior faculty

What does it take to win greater federal leverage?

- A good source of ready match
- Infrastructure in place
- A strategic focus
- Collaboration
- Planning for critical mass
- Faculty becoming nationally competitive
- Priority setting
- Performance measurement and accountability
- Goals in education for students and faculty

Case Study:

**National Heart, Blood and Lung Institute
Proteomics Center Proposal, 2/8/02**

- \$14,700,000 over 7 years with a \$180k of state support
- The partners are: KU Med, HBC, ITTC, MRI, University of Health Sciences and St. Luke's Hospital
- HBC's mass spectrometer, biochem labs
- A Role for ITTC: Major Bioinformatics database involved
- KC Life Sciences Institute is a catalyst
- MRI will bid for the quality assurance management piece, has had large experience with Enrail

Commercialization Potential: licenses, spin-offs from the

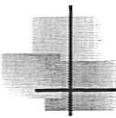
I have a proposal on my desk right now that encompasses all the elements for cluster building.

First it involves the creation of a Proteomics Center, the mapping of the human proteome, a project of greater magnitude than the mapping of the human genome. It is my understanding there will be only 10 of these centers in the country.

It is nearly \$15 million of leverage from the National Heart, Blood and Lung Institute for \$180 thousand of state support.

The partners are:

- University of Kansas Medical Center
- Higuchi Biosciences Center
- Information Technology and Telecommunication Center
- Midwest Research Institute
- University of Health Sciences
- St. Luke's Hospital



“A research university provides a valuable resource for technology firms, but does so only if the university is open to and actively facilitates linkages with the private sector.”

*--Developing High-Technology Communities: San Diego,
March 2000*

Now I will turn the presentation over to Matt. He will go on to discuss the technology cycle as I indicated earlier.

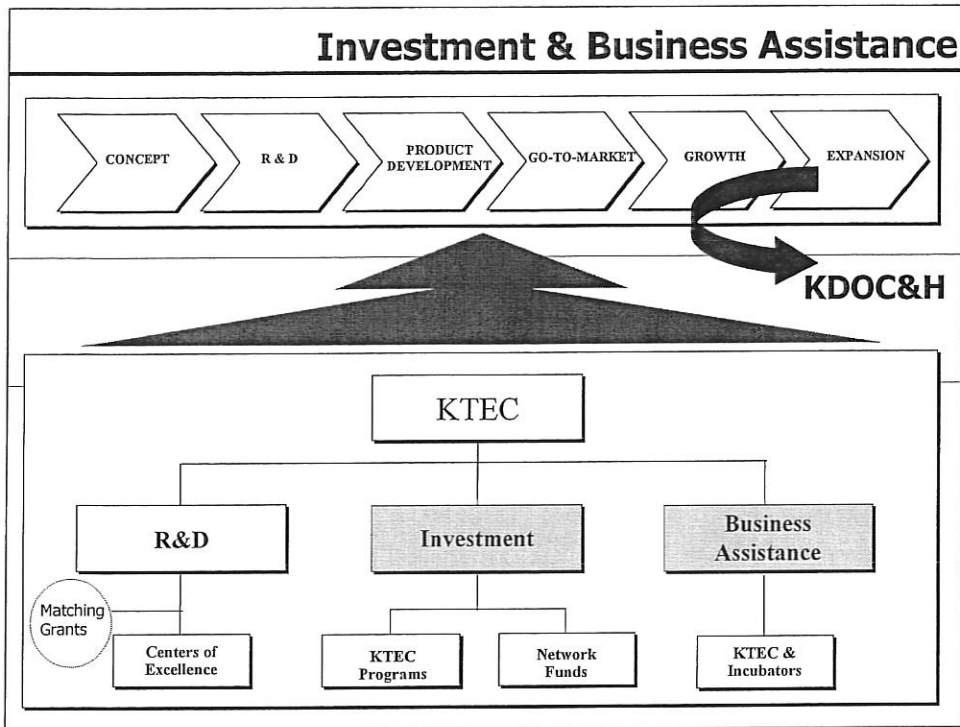
This quotation is particularly pertinent to his discussion.

Lessons learned from the San Diego cluster model...

“A research university provides a valuable resource for technology firms, but does so only if the university is open to and actively facilitates linkages with the private sector.”



Investment & Business Assistance



Investment and Business Assistance

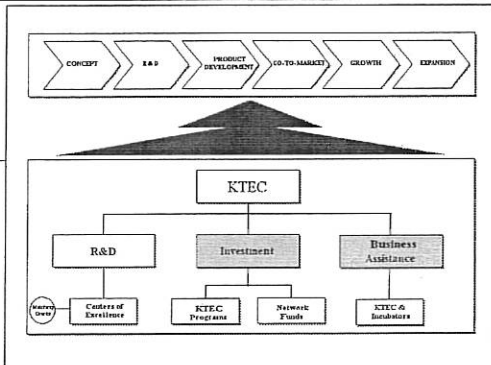
Our Investment and Business Assistance at Work

<p>VASOGENIX, INC.</p> <ul style="list-style-type: none"> • Higuchi Bio-sciences Center • KU Med Center • Applied Research Matching Fund (ARMF) and Network Seed Funds <ul style="list-style-type: none"> • \$350,000 	<pre> graph LR A[R & D] --> B[PRODUCT DEVELOPMENT] B --> C[GO-TO-MARKET] </pre>
<p>NANOSCALE MATERIALS</p> <ul style="list-style-type: none"> • Kansas State University "Spin-off" • MACC Client <ul style="list-style-type: none"> – Lab space, offices, et. al. • ARMF and Network Seed Funds 	<pre> graph LR A[CONCEPT] --> B[R & D] B --> C[PRODUCT DEVELOPMENT] C --> D[GO-TO-MARKET] </pre>
<p>HANDSIGNAL</p> <ul style="list-style-type: none"> • Applied Research Matching Fund Client <ul style="list-style-type: none"> – Venture Capital Leverage: 12.7 to 1 • Assistance Raising Additional Venture Capital 	<pre> graph LR A[R & D] --> B[PRODUCT DEVELOPMENT] B --> C[GO-TO-MARKET] </pre>
<p>VEOTROS</p> <ul style="list-style-type: none"> • Information Technology and Telecommunications Center Client • Negotiated License with Turner Broadcasting 	<pre> graph LR A[R & D] --> B[PRODUCT DEVELOPMENT] B --> C[GO-TO-MARKET] </pre>

Investment and Business Assistance

Our Partners

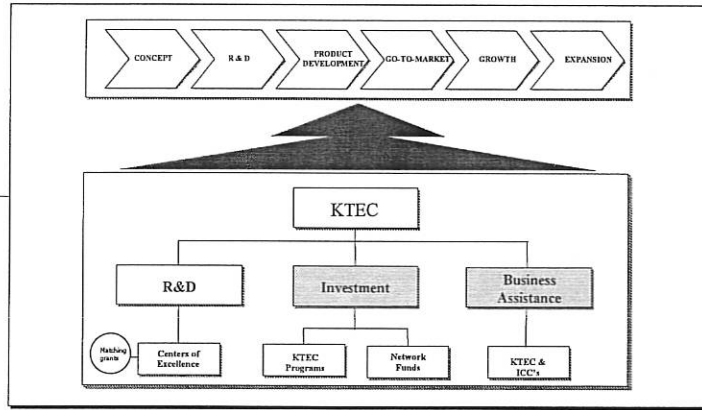
- Alliance for Technology Commercialization
Pittsburg
- Enterprise Center of Johnson County
Lenexa
- Kansas Innovation Corporation
Lawrence
- Mid-America Commercialization Corporation
Manhattan
- Wichita Technology Corporation
Wichita
- KU Medical Center Research Institute
Kansas City, KS



Our Partners at Work

PARTNERSHIP STRUCTURE	THE RESULTS
<ul style="list-style-type: none"> • MACC and the KSU Research Foundation have a formal partnership agreement • MACC markets and negotiates licenses for all KSU technologies. 	<ul style="list-style-type: none"> • Cumulative new revenue flows generated by MACC for KSU, the KSU Research Foundation, and university researchers exceeded <u>\$5M, \$2.2M in 2001 alone.</u> • Cumulative corporate donations of about <u>200 patents</u> secured from <u>8 major corporations</u> under MACC's national leading Technology Acquisition Development and Commercialization (TADAC) program. • Manhattan's Research Park Update

The Bottom Line



The KTEC economic development model is structured to effectively deliver the resources needed by high-technology start-up companies in the state of Kansas. *However, the resources must be committed to assist those companies.*

KTEC AT A GLANCE

WHAT IS KTEC?

KTEC is a state-owned corporation established in 1987 to stimulate economic development in Kansas by supporting technology research, facilitating the development of new technology products, and assisting small technology companies.

WHAT DOES KTEC DO?

KTEC helps turn innovative ideas into marketable products by supporting university and industry research, providing business assistance to entrepreneurs and small technology companies, and making investments in new technologies. New technologies help to diversify our state economy and improve the health and welfare of Kansans.

HOW IS KTEC GOVERNED?

KTEC is governed by a 20-member board of directors which includes legislators, university leaders, and industry representatives who are appointed by the Governor and legislative leaders. KTEC's budget follows the same approval process as other state agencies.

HOW IS KTEC FUNDED?

KTEC is funded by proceeds from the Economic Development Initiatives Fund (EDIF), which consists of revenues from the Lottery and Racing Commission. KTEC leverages this state funding with federal and private dollars at a ratio of \$5.5:1.

ISN'T THE LOTTERY FOR EDUCATION?

When the lottery was created, the governor and legislature determined that directing lottery revenue to economic development would provide the greatest benefit for the state. Still, universities receive about \$9-million directly from the lottery and about half of KTEC's budget goes to universities through research funding.

If the state invests in education but not in economic development, Kansas graduates seek job opportunities in other states. If we do not provide high-wage jobs for our college graduates, Kansas taxpayers, our investment in education is lost as our best and brightest seek employment in other states.

Kansas Technology Enterprise Corporation

214 S.W. 6th, First Floor
Topeka, KS 66603-3719

Ph: (785) 296-5272 Fx: (785) 296-1160

E-mail: ktec@ktec.com
Web: www.ktec.com

HOW DOES KTEC BENEFIT KANSAS?

KTEC assistance leads to new companies, new technology products, new high-wage jobs, increased sales, a broader tax base, and a more diverse state economy.

While we can measure the economic impact of our efforts, we often forget that the research and technologies we support have immeasurable benefits for the health, safety and welfare of individuals and society.

University researchers and companies receiving KTEC assistance are developing:

- drug delivery systems which help the body utilize new medications,
- technology that can predict and may one day prevent epileptic seizures,
- soy-based products such as inks and polymers,
- aviation systems to make air travel safer and more reliable,
- an AIDS vaccine, and
- technologies to ensure the safety of crops and foods.

HOW DOES KTEC WORK?

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

KTEC has designed and built a statewide network to support researchers, inventors, entrepreneurs, and businesses through each phase of the technology life cycle - from a basic idea to a successful product. KTEC provides services in three areas: **research, investment, and business assistance.**



RESEARCH SUPPORT

KTEC has created a variety of programs to support basic and applied technology research. State universities receive financial support for basic research that has commercial potential. Companies in Kansas can receive funding for applied research to develop specific products, and technical assistance in solving research problems. All KTEC programs provide for some form of return on investment.

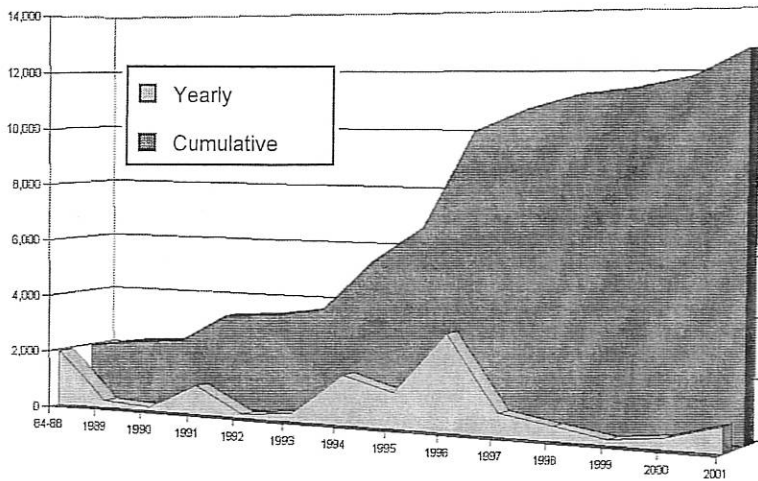
INVESTMENT

KTEC provides Kansas technology-based companies with seed capital, royalty grants, and loans through a series of investment programs and funds. These programs address the research and development financing needs of start-up businesses as well as established companies.

BUSINESS ASSISTANCE

KTEC's statewide network of experienced people and organizations nurtures and mentors small technology companies in Kansas. **NEW ECONOMY**
cess of small companies 2-19-02
contributions to the state ATTACHMENT 3
sales, new jobs, and we

Jobs Created or Retained 1984-2001

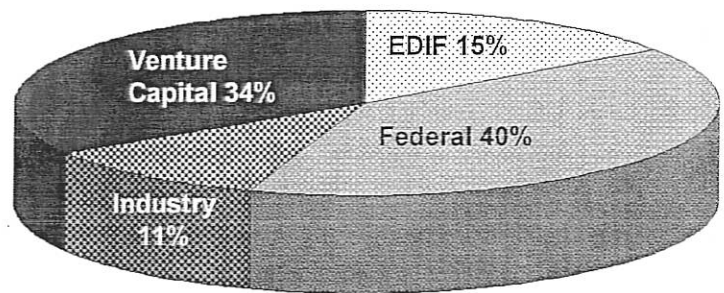


Cumulative Results 1984-2001:

- \$1.1 billion increased sales
- 294 company start-ups
- 12,726 jobs created or retained
- 525 technologies developed
- 217 patents issued
- 3,110 inventors assisted
- \$3.7 million royalties received
- \$4.17 million equity returns

FY 2001 Investment:

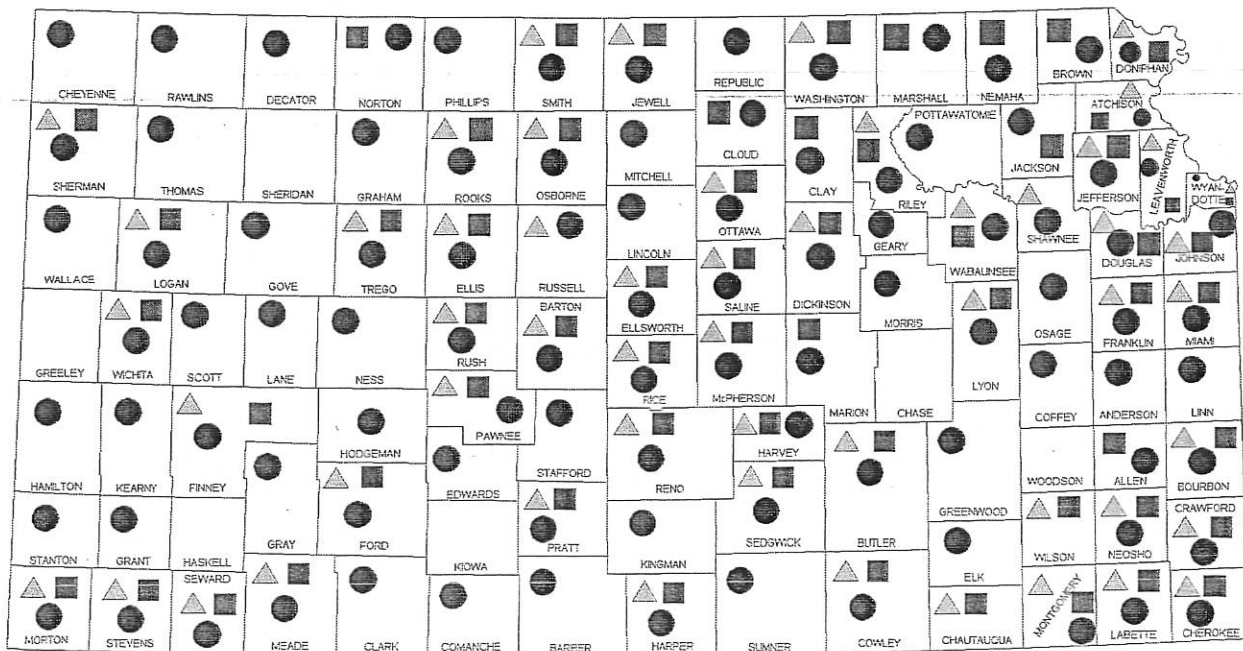
- \$13.1 million state EDIF invested
- \$9.3 million industry invested
- \$34.3 million federal invested
- \$29.0 million venture capital invested
- Total: \$85.7 million Leverage: \$5.5:1**



FY 2001 Percent of Total Investment

Statewide Outreach

Over the past 13 years, KTEC has strategically expanded existing programs and developed new programs to meet the constantly changing needs of Kansas companies, and to keep pace with the evolving innovation economy. KTEC has provided assistance to individuals or organizations in 99 of the 105 Kansas counties.



- Business Assistance
- Research
- ▲ Investment

The Power of 5

The combined work of your Kansas Centers of Excellence touches many lives in the state of Kansas, across the country and around the globe. Through their unique product innovations and leading-edge research they have developed new marketable products, advanced business systems and break-through technologies resulting in new Kansas businesses and jobs.

The Centers' impressive efforts, to various degrees, apply to nearly every major area of Kansas economic and legislative interests. Whether it's agriculture, business/industry, education, health/safety or technology, the cumulative power of the 5 Centers of Excellence has encouraged economic development in Kansas and improved our quality of life.

Kansas Centers of Excellence⁵

Higuchi Biosciences Center
University of Kansas, Lawrence

State Impact: Pharmaceutical research to discover ways to improve the safety, delivery and performance of disease-specific drugs

Information & Telecommunication Technology Center
University of Kansas, Lawrence

State Impact: Research and develop communications, computing and sensor technologies that will benefit consumers and businesses

Advanced Manufacturing Institute
Kansas State University, Manhattan

State Impact: Innovations in manufacturing technologies to help companies manufacture new and existing products more safely and efficiently

National Institute for Aviation Research
Wichita State University, Wichita

State Impact: Only university-based aircraft technology and passenger safety testing center serving major aviation-related companies

Kansas Polymer Research Center
Pittsburg State University, Pittsburg

State Impact: Leading-edge research for the creation of new and improved polymer & plastic materials using ag-based resources



A Proven Return Creating a Stronger Kansas

The Kansas Centers of Excellence, originally created by the state legislature (KSA 74-8101), has proven to deliver an excellent return on investment for the state of Kansas. In the last five years alone they have ...

- Leveraged the state's investment into \$ 113,800,000 of non-state funding from various federal and industry sources.
- Attracted \$ 21,000,000 in Research & Development work from state and national industry clients – *which is twice the national average for other research universities.*
- Started 13 new Kansas companies -- *10 times the average recorded in 1999 by other state university-based research centers.*

The funding received from the state helps your Kansas Centers of Excellence secure the additional resources and staff they need to remain competitive and continue to meet the growing demands of federal and industry clients. The Kansas Centers of Excellence⁵ is a sound investment.

For more information about your Kansas Centers of Excellence log-on to www.KScoe.org.

The Power of 5



The Power of 5



Advanced Manufacturing Institute
Kansas State University, Manhattan



Higuchi Biosciences Center
University of Kansas, Lawrence



Information & Telecommunication Technology Center
University of Kansas, Lawrence



Kansas Polymer Research Center
Pittsburg State University, Pittsburg



National Institute for Aviation Research
Wichita State University, Wichita

By employing the highly-focused power of one -- or all 5 -- of these technology centers, Kansas start-ups, as well as major corporations, can stimulate their growth or gain a competitive advantage... while creating a stronger Kansas.

2099 Constant Ave. Lawrence, KS 66047



Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
ARM	271	BMC America BMC Rotary Valve Gemini 350 V-8	El Dorado	BU	1991
ARM	329	BMC America BMC Rotary Valve Gemini 350 V-8	El Dorado	BU	1992
ARM	408	LithoCraft Printing Systems Single-Plate 4-Color Printing Press and Matched Imagesetter	Andover	BU	1994
ARM	470	Precision Built Systems Inc Robotic Aided Building Systems that Produce Buildings That Meet Integrity of Plans & Specs	Rose Hill	BU	1995
ARM	475	Precision Built Systems Inc Robotic Aided Building Systems that Produce Buildings That Meet Integrity Plans/Specs(Phase II	Rose Hill	BU	1995
ARM	497	Precision Built Systems Inc Robotic Aided Building Systems that Produce Buildings That Meet Integrity Plans/Specs-Phase III	Rose Hill	BU	1996
ARM	515	O'Mara Enterprises Dry Wall Technology	Winfield	CL	1996
TEG	50019	Cowley County Community College Aviation Powerplant Mechanic Program	Arkansas City	CL	
TEG	50026	Cowley County Community College Aviation Airframe Mechanic Program	Arkansas City	CL	
IDAP	750010	Cliff Gottlob Corvette Transaxle	Arkansas City	CL	1999
ARM	178	Hay and Forage Industries A Continuous-Feed Round Hay Baler	Hesston	HV	1989
SBIR	150058	Ross Aviation Associates Inc Sheared Wing Tips	Sedgwick	HV	1995

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Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
AAIC	800002	GW Products Inc pelleted flavor wood	Newton	HV	
ARM	118	Boeing Commercial Airplane Group Effect of Spanwise and Chordwise Blowing on Fin/ Rudder Control Effectiveness	Wichita	SG	1987
ARM	126	Ametek Inc Suitability of Electrodeposition Processes for High Temperature Superconductors Phase I	Wichita	SG	1988
ARM	127	Boeing Commercial Airplane Group Application of Game Theory to Air Combat	Wichita	SG	1988
ARM	134	NCR Corporation Efficient Modeling Techniques of Large Heterogeneous LANs	Wichita	SG	1988
ARM	138	Boeing Commercial Airplane Group Knowledge Based System Concepts Applied to Integrated Diagnostics	Wichita	SG	1988
ARM	158	Precision Pattern Incorporated Producibility Study Aircraft Interiors - Cabinets and Furnishings	Wichita	SG	1989
ARM	159	Beech Aircraft Corporation Structural Composite Producibility Study	Wichita	SG	1989
ARM	160	Beech Aircraft Corporation Development of Electrically Conductive Adhesives for Composite Systems	Wichita	SG	1989
ARM	163	Boeing Commercial Airplane Group Relaxation in Bolted Composite Joints	Wichita	SG	1989
ARM	167	Boeing Commercial Airplane Group Calculation of High Angle-of-Attack Aerodynamics of Airplane Configurations	Wichita	SG	1989
ARM	168	Boeing Commercial Airplane Group Aircraft Aerodynamics with Deflected Jets in Ground Effect	Wichita	SG	1989

Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
ARM	169	Boeing Commercial Airplane Group Shear Buckling Characteristics of Composite Panels with Holes and Beads	Wichita	SG	1989
ARM	170	Boeing Commercial Airplane Group Development of Computer Program to Analyze Fracture in Layered Structures	Wichita	SG	1989
ARM	177	Boeing Commercial Airplane Group Flight Control Computer Performance and Reliability Analysis	Wichita	SG	1989
ARM	183	Boeing Commercial Airplane Group Aerodynamic Capability of Low Observable Aircraft Config.-Passive & Active Flow Control Devices	Wichita	SG	1989
ARM	189	NCR Corporation Modeling Networked Information Systems	Wichita	SG	1990
ARM	191	Ametek Inc Research and Development of High Temperature Superconductors Phase II	Wichita	SG	1990
ARM	192	Cessna Aircraft Company Wind Tunnel Investigation to Improve the Maximum Lift & Lateral Control of Caravan I Aircraft	Wichita	SG	1990
ARM	220	Boeing Commercial Airplane Group Resin Transfer Molding Concept Validation - Integrated Wet Wing Box	Wichita	SG	1990
ARM	228	Beech Aircraft Corporation Buckling Characteristics of Sandwich Panels With Unsymmetrical Face Sheets	Wichita	SG	1990
ARM	231	Cessna Aircraft Company Corrosion Fatigue Testing of 6013 Al Alloy Sheet Metal	Wichita	SG	1991
ARM	242	Beech Aircraft Corporation Resin Transfer Molding Producibility Study for Beech Aerospace High Performance Low Cost Missile.	Wichita	SG	1991
ARM	249	Beech Aircraft Corporation Development of Electrically Conductive Adhesives For Composite Systems	Wichita	SG	1991

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Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
ARM	255	Coleman Outdoor Products, Inc. Analysis and Testing of the Coleman RAM-X Canoe	Wichita	SG	1991
ARM	293	American Water Purification Inc Direct Application of Ozone for Control of Salmonella on Poultry Carcasses	Wichita	SG	1992
ARM	321	Gradient Force, Inc. Comminuter Apparatus	Valley Center	SG	1992
ARM	337	Gradient Force, Inc. Comminuter Apparatus Development	Valley Center	SG	1992
ARM	373	Overhead Camera Systems Inc Research and Development of Medical Sky-Eye Camera	Wichita	SG	1993
ARM	379	Logic Data Systems Delta Emulator	Bentley	SG	1993
ARM	399	Fiber Dynamics, Inc. Application of Advanced Composites Manufacturing Technology to the Bicycle Industry	Wichita	SG	1994
ARM	460	Pelleting Concepts International Pressurized Pelleting	Wichita	SG	1995
ARM	461	Impact Dynamics General Aviation Aircraft Seat Development	Wichita	SG	1995
ARM	466	Knowledge Communication, Inc. Performance Appraisals: Partnerships for Success	Wichita	SG	1995
ARM	468	Hutterer Aircraft Development of a Low Cost Turboprop, Phase I, Sub- task A (Aerodynamic Refinement)	Wichita	SG	1995
ARM	469	Multinational Trading Company Wenger Pasta Line & Kice Short-Flow Flour Mill at the Veronezh, Russia PJSC "Kreker" Factory	Wichita	SG	1995

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Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
ARM	471	Cytech Universal Transport/Hauler System (Phase I)	Wichita	SG	1995
ARM	472	Cytech Universal Transport/Hauler System (Phase II)	Wichita	SG	1995
ARM	473	Knowledge Communication, Inc. Using Artificial Intelligence (AI) to Develop an Interactive Multimedia CD-ROM/Corporate Training	Wichita	SG	1995
ARM	481	ReLight America Inc Development of Certifiable, Modular Neon High- Voltage Components & Cabling Sub-Systems	Wichita	SG	1995
ARM	485	Impact Dynamics General Aviation Energy Absorbing Airbag Development - Phase I	Wichita	SG	1995
ARM	490	Impact Dynamics General Aviation Energy Absorbing Airbag Development - Phase II	Wichita	SG	1996
ARM	498	Pelleting Concepts International PCI 1000 Series - Pressurized Pelleting	Wichita	SG	1996
ARM	503	Logic Data Systems Delta Emulator	Bentley	SG	1996
ARM	527	ReLight America Inc Continued Enhancement of High Voltage Power & Distribution System for Neon Lighting	Wichita	SG	1997
ARM	530	ReLight America Inc Pre Commerc. Tooling Samples & Use/Function Test. for Compliance w Accept. by Natl Recog. Lab	Wichita	SG	1997
ARM	564	The Ullmann Aircraft Company LLC Metal Laminar Flow Wing	Wichita	SG	1998
ARM	578	H.C.I.,L.L.C. Floor Trader - Commodity Analysis & Trading Software	Wichita	SG	1998

Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
ARM	581	PAC-MIG, INC. 350 Amp Pressurized Air-Cooled MIG gun	Wichita	SG	1998
ARM	582	Chromatech Corporation In-Depth Imaging Project '98	Wichita	SG	1998
ARM	585	The Ullmann Aircraft Company LLC Metal Laminar Flow Wing (Phase II)	Wichita	SG	1998
ARM	592	Pangaea Geochemical Technologies Soil Vapor Light Hydrocarbon Analysis as a Method of Exploring for Oil & Gas	Wichita	SG	1998
ARM	601	Galaxy Audio Inc. Core Powered Speaker Line	Wichita	SG	1999
ARM	609	Certified Technologies Corporation Energy Absorbing Aircraft Seat Pan	Wichita	SG	1999
ARM	610	Pelleting Concepts International PCI 1200 Pressurized Pellet Mill Test	Wichita	SG	1999
ARM	623	Galaxy Audio Inc. FAR OUTLET Sinusoidal	Wichita	SG	1999
ARM	624	Pangaea Geochemical Technologies Field Testing of the Pangaea Gas-Sieve Method of Oil and Gas Exploration	Wichita	SG	1999
ARM	629	Pelleting Concepts International PCI 1200 Pressurized Pellet Mill Test	Wichita	SG	1999
ARM	637	PitStop Auto.Com Inc Innovation of Collision Auto Parts Sales Via the Internet (Phase I)	Wichita	SG	1999
ARM	638	PitStop Auto.Com Inc Innovation of Collision Auto Parts Sales Via the Internet (Phase II)	Wichita	SG	1999

Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
ARM	654	The Ullmann Aircraft Company LLC Metal Laminar Flow Wing (Phase III)	Wichita	SG	2000
ARM	678	ReLight America Inc Development of a Wet Location High Voltage Splice Connector	Wichita	SG	2000
ARM	683	Henry Engine, Inc. Development of Heat Recovery System and Engine for Vehicles	Wichita	SG	2001
ARM	711	Living Naturally Natural Products Industry/Database Development Project	Wichita	SG	2001
ARM	718	ReLight America Inc Development of a Dry Location Electrode Enclosure	Wichita	SG	2002
ADF	40002	PitStop Auto.Com Inc Innovation of Collision Auto Parts Sales Via the Internet	Wichita	SG	1999
ADF	40003	Environmental Compliance Consulting, Inc. Environmental Compliance Commercialization Efforts	Wichita	SG	1999
TEG	50003	Wichita Area Technical College Computer Integrated Manufacturing Technology	Wichita	SG	
TEG	50017	Wichita Area Technical College Computer Numerical Control Training Center	Wichita	SG	
TEG	50023	Wichita Area Technical College Computer Integrated Manufacturing Technology	Wichita	SG	
TEG	50032	Wichita Area Technical College CIM Lab Upgrade/CAD Lab Interface	Wichita	SG	
TEG	50034	Wichita Area Technical College Addressing Retraining Needs of Laid Off Worker Integrating Manufacturing Concepts Across Programs	Wichita	SG	

Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
TEG	50036	Wichita Area Technical College CNC/CIM and Materials Lab Upgrade	Wichita	SG	
REG	100008	National Institute for Aviation Research Dynamic Testing Facility	Wichita	SG	
REG	100023	Wichita State University Computer Integrated Manufacturing Equipment Grant	Wichita	SG	
REG	100024	Wichita State University Separation of DNA Fragments and Nucleic Acid Componets by High-Performance Liquid Electrochro..	Wichita	SG	
REG	100026	Wichita State University Creation of a Electronics and Power Quality Research Laboratory	Wichita	SG	
PH-0	140001	Pangaea Geochemical Technologies Detecting Natural Fracture Systems in Tight Gas Formations and in Natural Gas Storage Reservoirs...	Wichita	SG	1999
SBIR	150018	B & D Instruments and Avionics Inc Piezopolymer Optimization for Boundary-Layer Flow Sensor Arrays	Wichita	SG	1991
SBIR	150065	Waste Resource Recovery, Inc. New Densified Wood Products with Higher Heating Values	Wichita	SG	1995
SBIR	150076	Waste Resource Recovery, Inc. Densified Wood Products from Waste Wood	Wichita	SG	1996
OTR	170013	EAS Corporation Street Wise	Wichita	SG	1998
SPJ	250012	Wichita State University Kansas Quality Improvement Network Plan	Wichita	SG	
SPJ	250013	Wichita State University Libraries Patent Depository Library (PDL)	Wichita	SG	

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Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
SPJ	250031	National Institute for Aviation Research Kansas Quality Improvement Network between KTEC and the Technology Application Center	Wichita	SG	
SPJ	250045	Center for Entrepreneurship High School Entrepreneurship	Wichita	SG	
SPJ	250051	Wichita State University Comprose Strategic Consulting & Editing Services	Wichita	SG	
SPJ	250057	Knowledge Communication, Inc. CD-ROM also FryeAllen Advertising	Wichita	SG	
SPJ	250058	Kansas Math & Science Coalition Development of KS Strategic Technologies Educational Base	Wichita	SG	
SPJ	250062	Center for Entrepreneurship High School Entrepreneurship Conference	Wichita	SG	
SPJ	250069	Kansas Math & Science Coalition KMSEC Intern Sponsorship	Wichita	SG	
SPJ	250074	Kansas Math & Science Coalition Technology Strategic Plan - Phase II	Wichita	SG	
SPJ	250082	Center for Entrepreneurship High School Entrepreneurship Conference	Wichita	SG	1997
SPJ	250095	Kansas Award for Excellence Kansas Award for Excellence	Wichita	SG	1998
SPJ	250102	Wichita State University High School Entrepreneurship Conference - WSU	Wichita	SG	1998
SPJ	250108	Center for Entrepreneurship Explore Entrepreneurship Conference	Wichita	SG	1999

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Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
SPJ	250112	Wichita Chapter NTMA NTMA - Bill Pritchard memorial scholarships	Wichita	SG	1999
SPJ	250114	Dr. William M. Mayfield Angel/Entrepreneur Survey	Wichita	SG	1999
SPJ	250127	Kansas Award for Excellence Kansas Award for Excellence	Wichita	SG	2000
SPJ	250130	Center for Entrepreneurship Center for Entrepreneurship Conference	Wichita	SG	2000
SPJ	250150	Wichita Technology Corporation Council on Competitiveness Clusters of Innovation	Wichita	SG	2001
SPJ	250153	Kansas Award for Excellence Kansas Award for Excellence	Wichita	SG	2001
SPJ	250155	Center for Entrepreneurship 2001 Explore Entrepreneurship High School Conference	Wichita	SG	2001
SPJ	250168	Center for Entrepreneurship 2002 Explore Entrepreneurship High School Conference	Wichita	SG	2002
CSPJ	300007	National Institute for Aviation Research Wichita Innovation Network (Equipment)	Wichita	SG	
CSPJ	300012	National Institute for Aviation Research Composites Laboratory Upgrade	Wichita	SG	
CSPJ	300016	National Institute for Aviation Research Aircraft Design & Manufacturing Research Center	Wichita	SG	
CSPJ	300024	Wichita State University Electro-Impulse De-Icing System Enhancements	Wichita	SG	1998

Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
CSPJ	300025	Wichita State University Increased Production Rate Via High-Speed Drilling	Wichita	SG	1998
CSPJ	300033	Wichita State University Mitigation of Supplier Risk to Optimize the Supply Chain	Wichita	SG	2000
COMM	500005	Center for Entrepreneurship High School Entrepreneurship Program	Wichita	SG	
EPS	700010	Wichita State University Aircraft Design and Manufacturing Research Center	Wichita	SG	
EPS	700016	Wichita State University Aircraft Design and Manufacturing Research Center	Wichita	SG	1997
EPS	700023	Wichita State University Aircraft Design and Manufacturing Center - Part II FY 97	Wichita	SG	1997
EPS	700027	Wichita State University FAA Center of Excellence in Aircraft Airworthiness Assurance	Wichita	SG	1998
EPS	700029	Wichita State University Aircraft Design and Manufacturing Research Center - WSU, funding for 1998	Wichita	SG	1998
EPS	700034	Wichita State University Aircraft Design & Manufacturing Research Center FY98 (ADMRC)	Wichita	SG	1998
EPS	700040	Wichita State University Aircraft Design and Manufacturing Research Center (ADMRC)	Wichita	SG	1999
EPS	700041	Wichita State University FAA Center of Excellence in Aircraft Airworthiness Assurance	Wichita	SG	1999
EPS	700047	Wichita State University "the continuation of funding for the Aircraft Design and Manufacturing Research Center"	Wichita	SG	1999

Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

Program	#	Company	City	Co	FY
EPS	700062	Wichita State University The continuation of funding for the Aircraft Design and Manufacturing Research Center	Wichita	SG	2000
EPS	700072	Wichita State University FAA Center of Excellence in Aircraft Airworthiness Assurance	Wichita	SG	2000
EPS	700073	Wichita State University The Continuation of Funding for the Aircraft Design and Manufacturing Research Center	Wichita	SG	2000
EPS	700086	Wichita State University Aircraft Design and Manufacturing Research Center (ADMRC)	Wichita	SG	2001
EPS	700088	Wichita State University FAA Center of Excellence in Aircraft Airworthiness Assurance	Wichita	SG	2001
EPS	700092	Wichita State University KSATS - Kansas Small Aircraft Transportation System Program	Wichita	SG	2001
EPS	700098	Wichita State University Aircraft Design and Manufacturing Research Center	Wichita	SG	2001
EPS	700112	Wichita State University Aircraft Design and Manufacturing Research Center (ADMRC)	Wichita	SG	2002
EPS	700114	Wichita State University FAA - Bonded Repair of Composite Airframe Structures	Wichita	SG	2002
EPS	700118	Wichita State University FAA - Effect of Critical Ice Shapes on Finite Wing Geometries.	Wichita	SG	2002
IDAP	750001	Leo Johnson Pager Holder	Wichita	SG	1996
IDAP	750003	Logic Data Systems Delta Emulator	Bentley	SG	1996

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Selected KTEC Activity - Butler, Chase, Cowley, Elk, Greenwood, Harvey, Marion and Sedgwick Counties

<i>Program</i>	<i>#</i>	<i>Company</i>	<i>City</i>	<i>Co</i>	<i>FY</i>
IDAP	750006	Eric D Garcia Roller Piston	Wichita	SG	1997
IDAP	750009	Logic Data Systems Construction and Demonstration of Delta Emulator	Bentley	SG	1998

Guide to Program Codes:

AAIC	Advanced Agriculture Innovation/Commercialization
ARM	Applied Research Matching Fund
ADF	Accelerated Development Fund
BRI	SBIR (Small Business Innovation Research) Bridge Financing
COMM	Commercialization Office
CSPJ	Centers (of Excellence) Special Projects (not core funding)
EPS	EPSCoR
IDAP	Invention Development Assist Program
LIAI	Liaison Office
OPER	Operations
OTR	General Federal Grants Proposal Preparation
PH-0	Phase 0 SBIR (Small Business Innovation Research)
REG	Research Equipment Grant
SBIR	Small Business Innovation Research
SPJ	Special Projects
SSBIR	State SBIR
TEG	Training Equipment Grant
TELE	Telecommunications

KTEC CLIENT COMPANIES - Selected KTEC Activity

<u>Client Name</u>	<u>City</u>	<u>Project Id</u>	<u>Division</u>	<u>County</u>
Terry Engineering	Andover	950000	NIAR	BU
Terry Engineering	Andover	950032	NIAR	BU
Terry Engineering	Andover	950033	NIAR	BU
Terry Engineering	Andover	950034	NIAR	BU
Precision Built Systems Inc	Rose Hill	497	NIAR	BU
Ross Aviation Associates Inc	Sedgwick	950014	NIAR	HV
Hillsboro Industries	Hillsboro	910014	AMI	MN
Ameri-Kart	Goddard	950021	NIAR	SG
Impact Dynamics	Wichita	461	WTC	SG
Impact Dynamics	Wichita	461	NIAR	SG
Knowledge Communication, Inc.	Wichita	473	WTC	SG
Wichita State University	Wichita	300024	NIAR	SG
Wichita State University	Wichita	300025	NIAR	SG
Wichita State University	Wichita	300033	NIAR	SG
Pelleting Concepts International	Wichita	910023	AMI	SG
ReLight America Inc	Wichita	910071	AMI	SG
Great Plains Industries Inc	Wichita	910084	AMI	SG
Keyston Wood Works	Wichita	910116	AMI	SG
Mid-Continent Resource Recovery, Inc.	Wichita	920000	KPRC	SG
Cessna Aircraft Company	Wichita	920006	KPRC	SG
Cessna Aircraft Company	Wichita	920009	KPRC	SG
Neon Power Pro	Wichita	920013	KPRC	SG
Cessna Aircraft Company	Wichita	920014	KPRC	SG
Biogics Inc	Wichita	930037	HBC	SG
Learjet Inc	Wichita	950001	NIAR	SG
Boeing Commercial Airplane Group	Wichita	950002	NIAR	SG
Wadsworth Development Company	Wichita	950004	NIAR	SG
Innovative Ideas, Inc.	Wichita	950008	NIAR	SG
Koch Industries Inc	Wichita	950010	NIAR	SG
Orthopaedic Research Institute Inc	Wichita	950011	NIAR	SG
Cessna Aircraft Company	Wichita	950012	NIAR	SG
Cessna Aircraft Company	Wichita	950013	NIAR	SG
Cessna Aircraft Company	Wichita	950015	NIAR	SG
Raytheon Aircraft Company	Wichita	950016	NIAR	SG
R... America Inc	Wichita	950019	NIAR	SG
AF...ngineering	Wichita	950020	NIAR	SG
Burnham Products Inc (Senior Aerospa	Wichita	950022	NIAR	SG

KTEC CLIENT COMPANIES - Selected KTEC Activity

<u>Client Name</u>	<u>City</u>	<u>Project Id</u>	<u>Division</u>	<u>County</u>
Casco Plastics	Wichita	950023	NIAR	SG
Coleman Company	Wichita	950024	NIAR	SG
Fiber Dynamics, Inc.	Wichita	950025	NIAR	SG
Mid-America World Trade Center	Wichita	950026	NIAR	SG
Recreation Vehicle Products	Wichita	950027	NIAR	SG
Tramco, Inc.	Wichita	950028	NIAR	SG
Learjet Inc	Wichita	950030	NIAR	SG
Recreation Vehicle Products	Wichita	950031	NIAR	SG
Boeing Commercial Airplane Group	Wichita	950035	NIAR	SG
Boeing Commercial Airplane Group	Wichita	950036	NIAR	SG
Boeing Commercial Airplane Group	Wichita	950036	NIAR	SG
Raytheon Aircraft Company	Wichita	950037	NIAR	SG
Raytheon Aircraft Company	Wichita	950038	NIAR	SG
Raytheon Aircraft Company	Wichita	950039	NIAR	SG
Raytheon Aircraft Company	Wichita	950040	NIAR	SG
Cessna Aircraft Company	Wichita	950041	NIAR	SG
Cessna Aircraft Company	Wichita	950042	NIAR	SG
Cessna Aircraft Company	Wichita	950043	NIAR	SG
Cessna Aircraft Company	Wichita	950044	NIAR	SG
Cessna Aircraft Company	Wichita	950045	NIAR	SG
Cessna Aircraft Company	Wichita	950046	NIAR	SG
Cessna Aircraft Company	Wichita	950047	NIAR	SG
Cessna Aircraft Company	Wichita	950048	NIAR	SG
Cessna Aircraft Company	Wichita	950048	NIAR	SG
Cessna Aircraft Company	Wichita	950048	NIAR	SG
Cessna Aircraft Company	Wichita	950048	NIAR	SG
Cessna Aircraft Company	Wichita	950048	NIAR	SG
Cessna Aircraft Company	Wichita	950048	NIAR	SG
Cessna Aircraft Company	Wichita	950048	NIAR	SG
Cessna Aircraft Company	Wichita	950048	NIAR	SG
Cessna Aircraft Company	Wichita	950056	NIAR	SG
Cessna Aircraft Company	Wichita	950056	NIAR	SG
Raytheon Aircraft Company	Wichita	950060	NIAR	SG
Recreation Vehicle Products	Wichita	950061	NIAR	SG
The Ullmann Aircraft Company LLC	Wichita	950063	NIAR	SG
Boeing Commercial Airplane Group	Wichita	950064	NIAR	SG
Boeing Commercial Airplane Group	Wichita	950065	NIAR	SG
Cessna Aircraft Company	Wichita	950067	NIAR	SG

KTEC CLIENT COMPANIES - Selected KTEC Activity

<u>Client Name</u>	<u>City</u>	<u>Project Id</u>	<u>Division</u>	<u>County</u>
Cessna Aircraft Company	Wichita	950068	NIAR	SG
Cessna Aircraft Company	Wichita	950069	NIAR	SG
Cessna Aircraft Company	Wichita	950070	NIAR	SG
Cessna Aircraft Company	Wichita	950079	NIAR	SG
Cessna Aircraft Company	Wichita	950080	NIAR	SG
Cessna Aircraft Company	Wichita	950081	NIAR	SG
Cessna Aircraft Company	Wichita	950082	NIAR	SG
Cessna Aircraft Company	Wichita	950083	NIAR	SG
Cessna Aircraft Company	Wichita	950084	NIAR	SG
Cessna Aircraft Company	Wichita	950085	NIAR	SG
Cessna Aircraft Company	Wichita	950086	NIAR	SG
Cessna Aircraft Company	Wichita	950087	NIAR	SG
Cessna Aircraft Company	Wichita	950088	NIAR	SG
Cessna Aircraft Company	Wichita	950089	NIAR	SG
Balco Metalines	Wichita	950090	NIAR	SG
Fiber Dynamics, Inc.	Wichita	950091	NIAR	SG
Burnham Products Inc (Senior Aerospace)	Wichita	950092	NIAR	SG
Fiber Dynamics, Inc.	Wichita	950093	NIAR	SG
Raytheon Aircraft Company	Wichita	950094	NIAR	SG
Koch Glitsch Inc	Wichita	950097	NIAR	SG
Coleman Company	Wichita	950098	NIAR	SG
Burnham Products Inc (Senior Aerospace)	Wichita	950100	NIAR	SG
Recreation Vehicle Products	Wichita	950101	NIAR	SG
Russell Company	Wichita	950102	NIAR	SG
Burnham Products Inc (Senior Aerospace)	Wichita	950103	NIAR	SG
Lee Aerospace	Wichita	950104	NIAR	SG
Lee Aerospace	Wichita	950105	NIAR	SG
Boeing Commercial Airplane Group	Wichita	950106	NIAR	SG
Cessna Aircraft Company	Wichita	950107	NIAR	SG
Bombardier	Wichita	950108	NIAR	SG
Air Train, Inc.	Wichita	950109	NIAR	SG
Cessna Aircraft Company	Wichita	950110	NIAR	SG
Lee Aerospace	Wichita	950112	NIAR	SG
Raytheon Aircraft Company	Wichita	950113	NIAR	SG
Big Red Motorcycles	Wichita	950114	NIAR	SG
Corbett Music Records	Wichita	950116	NIAR	SG
Recreation Vehicle Products	Wichita	950119	NIAR	SG

KTEC CLIENT COMPANIES - Selected KTEC Activity

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<u>Client Name</u>	<u>City</u>	<u>Project Id</u>	<u>Division</u>	<u>County</u>
Boeing Commercial Airplane Group	Wichita	950120	NIAR	SG
Bombardier	Wichita	950121	NIAR	SG
Cessna Aircraft Company	Wichita	950122	NIAR	SG
Recreation Vehicle Products	Wichita	950123	NIAR	SG
Innovative Ideas, Inc.	Wichita	962000	WTC	SG
PAC-MIG, INC.	Wichita	962001	WTC	SG
Ponca Products, Inc.	Wichita	962002	WTC	SG
ReLight America Inc	Wichita	962006	WTC	SG
Wellr Concepts International	Wichita	962008	WTC	SG
Certimed Technologies Corporation	Wichita	962009	WTC	SG
Environmental Compliance Consulting, I	Wichita	962010	WTC	SG
FitStop Auto.Com Inc	Wichita	962011	WTC	SG
Vixius Communications, LLC	Wichita	962012	WTC	SG
Intelligent Filters	Wichita	962013	WTC	SG
60 Wichita.com Inc	Wichita	962014	WTC	SG
MidnightRyder Technologies	Wichita	962015	WTC	SG
KTEC Precision Corporation (BAE Syste	Wellington	910072	AMI	SU

**Testimony for the New Economy Committee
February 19, 2002**

**Bill Jarrell
The Boeing Company**

Mr. Chairman and members of the New Economy Committee, my name is Bill Jarrell and I am the Regional Director of Government Relations for The Boeing Company. I am pleased to appear before the committee today representing the aviation industry in Kansas to provide an update on the request for aviation research funding for the WSU National Institute for Aviation Research.

Our industry is pleased that the legislature has maintained its focus on economic growth in Kansas, even in the face of severe national and state difficulties. Boeing, Bombardier Aerospace, Cessna Aircraft and Raytheon Aircraft account for ten percent of the net income of our state, and we have a vested interest in initiatives that help us to maintain that important impact on the state economy. Every 1,000 Kansas aircraft manufacturing jobs create an additional 2,300 jobs, generating a total of \$23 million in federal taxes and \$9 million in state and local taxes annually.

Most members of this committee are familiar with the request for aviation research funding presented to the interim Joint Committee on Economic Development, and many of you have toured the NIAR facilities at WSU in recent months. As a brief summary, the request by the aviation industry is for technical research and state-of-the-art laboratories and equipment at NIAR to help ensure Kansas remains competitive to meet existing and future needs of the aviation industry. The original request was for a continuing annual appropriation of \$5 million to support research and needed upgrades at NIAR totaling more than \$60 million during the next decade. The recommendation of the interim committee was for a \$20 million appropriation over four years to fund near term requirements.

Some confusion exists on the relationship of this request with the research and development proposal presented by the Kansas Board of Regents (now contained in HB 2690). While the two requests are different, and do not overlap, they are complementary and together should lead to increased federal funding for research at Kansas universities. I have attached a matrix to my testimony to help you understand the differences in the two proposals.

Our industry, along with so many others in our nation, is still dealing with the aftermath of September 11 and a slowing global economy. Difficult times require difficult decisions for business and state government alike. Yet even with so much attention on surviving the downturn in our economy (and industry), we cannot afford to take our eyes off of the future and what it takes to reach our vision. Consistent, targeted investment in research and development is undisputedly a requirement to be competitive in the world today.

The deliberations of this committee and the legislature to ensure Kansas maintains a stable and growing economy are noteworthy. On behalf of the aviation industry, we appreciate your serious consideration of the aviation research request and other initiatives directed at strengthening the economic vitality and competitiveness of our state.

Mr. Chairman, thank you for the invitation to appear before the committee. I am pleased to take questions and comments.

NEW ECONOMY
2-19-02
ATTACHMENT 4

Research and Development Proposal Comparison

University R&D Facilities

Requested by KBOR

Provides for the acquisition, construction and equipping of scientific research and development facilities on state-owned property of the KBOR or any state educational institution, including:

Bio-medical and life sciences research building at KUMC;
Food safety facility at KSU;
Engineering studies structure at WSU

Contained in HB 2690 (Appropriations)

Bonds not exceeding \$110M to be issued by Kansas development finance authority (first 5 years of payments made by state)

Aviation Research

Requested by aviation industry

Provides for technical research and specified laboratories and equipment at the WSU National Institute for Aviation Research (NIAR), including:

Technical research
Upgrade to existing wind tunnel
Icing tunnel
Upgrade to crashworthiness laboratory
Virtual reality laboratory

Legislation or amendment pending (also see HB 2925, regarding EDIF)

\$5M annual appropriation (a possible combination of funding and bonding is being considered)