

MINUTES OF THE SENATE COMMERCE COMMITTEE

The joint meeting of the House Eco Devo-Tourism and the Senate Commerce Committees was called to order by Chairman Lana Gordon at 3:30 a.m. on February 2, 2009, in Room 711 of the Docking Building.

All members were present except:

- Senator Jay Emler - excused
- Senator Dick Kelsey - excused

Committee staff present:

- Ms. Margaret Cianciarulo, Committee Assistant
- Mr. Reed Holwegner, Kansas Legislative Research Department

Conferees appearing before the Committee:

- Mr. Stan Ahlerich, President, Kansas, Inc.
- Dr. Jerry Paytax, GSP Consulting, from Pittsburgh, Pennsylvania

Others attending:

### Evaluation of Kansas Bioscience Authority

Upon calling the meeting to order, the Chair introduced Mr. Stan Ahlerich, President, Kansas, Inc., who stated since this initiative touched so many people across the State they thought it best to out source this to an entity outside Kansas for independence so they could have a group that basically had interacted with these types of initiatives before. He went on to say they had a good feel of what was happening in other parts of the nation with similar entities like this so that they can bring the best practices. No written testimony was offered.

Having said that, he introduced Dr. Jerry Paytax, GSP Consulting Group from Pittsburgh, Pennsylvania who stated that GSP Consulting was contracted by Kansas, Inc. to conduct this evaluation and is one of many unique attributes contained in the legislation that created the KBA. Highlights of their executive summary included:

- The evaluation conducted by GSP Consulting included the following:

1. Interviews with stockholders.
2. Review of information provided by KBA as part of a Legislative Post Audit, bench marking bioscience organizations and initiatives in other states, discussion with staff,
3. Review of board materials and operational documents, and their website & publications .
4. Bench marking bioscience organizations & initiative in other states.

- The four categories that the evaluation and assessment fell into included: the Statutory Agency, Funding Mechanism, Funding Service Recipient and Partner Organization.

- The three fundamental questions at the core of their evaluation were:

1. Is the KBA adhering to its statutory obligations?
2. Has the KBA initiated its statutorily defined programs?
3. What have been the initial outcomes of the KBA's investments?

- The phases of the Kansas Bioscience Authority including the startup and operations phase and major findings and recommendations including:

1. Preserving the funding mechanism.
2. Monitor the evaluation process.
3. Address communication gaps.
4. Increase R&D voucher activity.

A copy of his testimony is (Attachment 1) attached and incorporated into the Minutes as referenced.

## CONTINUATION SHEET

Minutes of the Joint Committee of the House Eco Devo-Tourism and Senate Commerce Committees at 3:30 a.m. on February 2, 2009, in Room 545-N of the Capitol.

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Chairman Gordon thanked Mr. Paytax and then asked for questions or comments from both Committees which came from Senators Holland, Faust-Goudeau, Lynn and Representatives Furtado and Schwartz including, is there anything to look at in helping us move forward? Did you focus on KBA and KTEC and is it time to reassess both organizations? (Ex. For overlap) Re: voucher activity, do you have other places to look at? Of the 928 new jobs, what percentage of Kansas holds these positions?

### **Adjournment**

As there was no further business, the Chair adjourned the meeting. The time was 4:20 p.m.

The next regular committee meeting is scheduled for Tuesday, February 3, 2009.

**Evaluation of the  
Kansas Bioscience Authority:**

***2004 to 2008***

GSP Consulting Corporation  
Pittsburgh, PA  
[www.gspconsulting.com](http://www.gspconsulting.com)

Prepared for



***December 2008***

Senate Commerce Committee

*Date: February 2, 2009*

Attachment 1

## Preface

Through the passage of the 2004 Kansas Economic Growth Act, the Governor and Legislature emphasized the state's focus on the growth of entrepreneurship and biosciences to stimulate the Kansas economy. These bold initiatives included the creation of the Kansas Bioscience Authority (KBA), an independent entity designed to guide the state's investment of over \$580 million dollars during the next 15 years in the bioscience industry. The Governor and Legislature also recognized the importance of a formal assessment process to determine the effectiveness of these initiatives, and Kansas, Inc. was given this responsibility.

This evaluation is not an audit of the KBA – which could be considered to be more of an academic and scientific research process designed to unambiguously identify and measure the results of government interventions in society. Rather, a Kansas, Inc. evaluation, by design, provides a holistic assessment of an economic development initiative – intended to capture the overall direction, sustainability and success of an initiative as envisioned by its initializing statute. Thus, the evaluation process produces dynamic input to the complex, interactive process that is government decision-making. This process results in a source of information that can assist the decision-making and management process for resource allocation and program improvement, while providing for overall accountability in government. Based on this premise, this evaluation makes several well-reasoned conclusions and recommendations that should be considered.

Given the uniqueness of the KBA, Kansas, Inc. designed the scope of this evaluation to be flexible and responsive to the needs of both the KBA and its stakeholders. Through this process, Kansas, Inc. utilized the services of GSP Consulting, a nationally-recognized firm with subject matter expertise on a programmatic-, state- and national-level in order to provide the systematic gathering of verifiable information and demonstrable evidence required to produce documented results and best practice comparisons. Kansas, Inc. commends the efforts of both GSP and KBA leadership to provide meaningful information to decision-makers.

While beyond the scope of this current evaluation, following the completion of this report Kansas has seen improved rankings relative to several bioscience indexes and the award of the National Bio and Agro-Defense Facility (NBAF) to the state. The KBA should be commended for their efforts.

Limited resources require focused efforts with measurable results. We must maintain focus on our core competencies that provide both inherent and emerging economic strengths within today's integrated global economy. These strengths, set in a focused environment for opportunity can contribute to the sustainability and growth of our economy. The bioscience industry is one of those strengths. This evaluation provides analysis regarding several conclusions and recommendations relative to the KBA that when implemented, will serve the state well in future years.

Stan Ahlerich  
President  
Kansas, Inc.



## Kansas, Inc. Board of Directors

Created by the Legislature in 1986, Kansas, Inc. is an independent, objective, and non-partisan organization designed to conduct economic development research and analysis with the goal of developing policies and recommendations to ensure the state's ongoing competitiveness for economic growth. To attain our mission, Kansas, Inc. undertakes these primary activities: 1) Identifying, building, and promoting a Strategic Plan for economic development efforts in the State of Kansas; 2) To complement the Strategic Plan, Kansas, Inc. develops and implements a proactive and aggressive research agenda, which is used to identify and promote sound economic development strategies and policies; 3) Through collaboration and outreach with economic development entities and other potential partners, Kansas, Inc. conducts evaluation reviews and provides oversight of economic development programs to benchmark development efforts in the State of Kansas.

Co-Chaired by the Governor, Kansas, Inc. is governed by a 17-member Board of Directors. Board members, as mandated by legislation, include four members of Legislative leadership, a representative from the Board of Regents, the Secretary of Commerce, the Commanding General of the Kansas Cavalry, a representative from labor, and eight other members from the private sector representing key Kansas industrial sectors. Private sector members are appointed by the Governor and confirmed by the Kansas Senate.

Through analysis and open dialogue, Kansas, Inc. identifies policy options and builds the consensus essential for concerted action on vital economic issues. Kansas, Inc. is designed to be a public-private partnership with expectations that state investments are leveraged with other funds to maintain a strong research portfolio.

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State Representative, Kansas City

**Sen. David Wysong**  
State Senator, Mission Hills

### Kansas, Inc. Staff

**Stan Ahlerich**  
President

**Debby Fitzhugh**  
Director of Operations

**Dan Korber**  
Sr. Research Analyst

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*(Paid for with taxes or public funds)*

## Executive Summary

### Overview

The Kansas Bioscience Authority was created in 2004 by the Kansas Economic Growth Act and was projected to be a 15 year, \$581 million initiative focused on growing the bioscience sector in the state of Kansas. This report is an evaluation of the Kansas Bioscience Authority (KBA) that was conducted by GSP Consulting on behalf of Kansas, Inc.

### About the KBA<sup>1</sup>

The Kansas Bioscience Authority (KBA) was created by the Kansas Economic Growth Act of 2004 with the sole purpose of advancing Kansas' leadership in bioscience.

The KBA is the state's largest-ever commitment to expanding Kansas' research capabilities, promoting innovation, and encouraging company formation that will create high-paying jobs for generations to come. The approximately \$581 million initiative is charged with:

- Building world-class research capacity;
- Fostering the formation and growth of bioscience startups;
- Supporting expansion of the state's bioscience clusters; and
- Facilitating industrial expansion and attraction.

The KBA is leveraging its funds to attract additional federal and private-sector support that could boost the total investment in bioscience in the state to more than \$5 billion.

### Governance

An independent entity of the state, the KBA is governed by an 11-person board of directors comprised of local and national leaders in industry and academia.

### Vision and strategy

In September 2007, the KBA board of directors adopted the following vision and strategies for the authority:

*Kansas is the preeminent bioscience center in the Midwest, serving healthcare, energy, agricultural, animal health, biomaterial, and national-security needs throughout the nation and around the world by virtue of its excellent research, education, and vibrant industry clusters.*

The KBA is focused on expanding Kansas' research and industry strengths to:

- Increase the quantity of high-quality research that has commercial relevance for Kansas;

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<sup>1</sup> This material is sourced from the website of the Kansas Bioscience Authority. Accessed from [http://www.kansasbioauthority.org/about\\_the\\_kba/](http://www.kansasbioauthority.org/about_the_kba/) on November 11, 2008.

- Expand the availability of investment capital needed to form and grow new companies;
- Grow and nurture an increasingly experienced pool of entrepreneurial management talent supported by organized systems of services and networking;
- Expand the availability of capital and assistance to support product innovation in established companies; and
- Facilitate bioscience corporate expansion and attract new-to-Kansas bioscience corporate activity that grows and strengthens specific clusters of excellence.

### **Programs**

Through the KBA and related initiatives, Kansas offers comprehensive support for world-class research, commercialization, and business expansion to accelerate company growth and job creation in the state.

### **Partners in growth**

The KBA's motto recognizes that its public, private, and academic partners are often at the forefront of efforts to expand bioscience R&D, foster the formation and growth of startups, and lead corporate expansion and attraction efforts. The KBA works with partners statewide to pursue specific bioscience growth opportunities, as well as to implement scalable programs developed for use by a broader range of constituents.

## About this Evaluation

GSP Consulting was contracted by Kansas, Inc. to conduct this evaluation as an objective, external reviewer. Kansas, Inc. and the KBA had the opportunity to review a preliminary report to identify any factual errors. Comments and clarifications provided by the KBA have been footnoted where they have appeared in this report. All other findings and conclusions in this report are the opinions of GSP Consulting based on verification from multiple sources, including interviews, data analysis, and benchmarking.

The performance of an evaluation, at a designated time (after 3 years), is one of many unique attributes contained in the legislation that created the KBA. Other attributes such as the funding model, board composition, and independence from direct state control make the KBA a unique addition to the national fabric of bioscience focused technology-based economic development programs.

The KBA has operated under two distinct phases that it has characterized as:

- Startup: Board operated with no employees (April 2004–October 2006)
- Operational: Employees hired, implementation of key operational policies and procedures, initiation of statutory programs (October 2006–June 2008)

**Our analysis considers these two phases as outlined by the KBA; however, this evaluation places emphasis on the current organizational structure and reflects current or ongoing operational dynamics.**

The legislation that created the KBA was signed into law more than 4 years ago; the KBA in many regards is still a new and evolving organization. As a result there are several areas we have evaluated that are still too early to fully assess.

The evaluation conducted by GSP Consulting has included the following steps:

- Interviews with stakeholders representing a variety of categories (as demonstrated on the chart below),
- Review of information provided by the KBA as part of a Legislative Post Audit,
- Review of board materials,
- Review of operational documents,
- Benchmarking bioscience organizations and initiatives in other states,

- Review of the organization's website and KBA focused publications, and
- Discussions with staff.

The following chart demonstrates the categories of individuals interviewed as part of this evaluation. The individuals interviewed were identified based on contacts provided by Kansas, Inc, the KBA, and GSP's independent identification Kansas bioscience companies and researchers. The list of candidates was reviewed with Kansas, Inc., but the final selection of who was interviewed was determined by GSP. In some cases the interviews included individuals who have had multiple interactions with the KBA in mixed roles, as board members, clients and partners. The table below classifies them by their primary relationship. In addition many of the companies have submitted multiple applications to the KBA, such that among the clients and partners interviewed actually represent 26 different applications to the KBA.

**Table 1: Categories of Interviewees**

<i>Category</i>	<i>Interviews Completed</i>
Client	11
Current Board Member <sup>2</sup>	4
Former Board Members	2
Not Served / Funded	3
Officials	9
Partners (include some clients)	8
Staff	5
<b>Grand Total</b>	<b>42</b>

GSP has not included direct quotes in this evaluation and we have reported criticisms only when they have been confirmed by several sources, or objective data. These restrictions reflect the fact that respondents spoke with GSP under a promise of confidentiality. In addition, the small size of the bioscience community in Kansas, combined with the limited track record of the KBA would make it too easy to associate individuals with specific quotes or comments about programs. It also ensures a level of objectivity so that the evaluation is not swayed by a few persuasive or extreme friends or critics.

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<sup>2</sup> Additional current and former board members were approached but were not able to be interviewed



## Key Issues

The evaluation and assessment conducted by GSP Consulting falls into four categories:

1. Statutory/ Agency Assessment
2. Funding Mechanism Assessment
3. Funding/ Service Recipient Assessment
4. Partner Organization Assessment

We have structured this report to follow those categories although some overlap of findings was necessitated. Three fundamental questions are at the core of this evaluation:

1. Is the KBA adhering to its statutory obligations?
2. Has the KBA initiated its statutorily defined programs?
3. What have been the initial outcomes of the KBA's investments?

On the first question, the Kansas Economic Growth Act of 2004 (KEGA) provided a broad mandate and considerable flexibility for assisting the bioscience industry in Kansas. The statute specified the following mission:

*...to make Kansas the most desirable state in which to conduct, facilitate, support, fund and perform bioscience research, development and commercialization, to make Kansas a national leader in bioscience, to create new jobs, foster economic growth, advance scientific knowledge and improve the quality of life for citizens of the state of Kansas.<sup>3</sup>*

At the current time, the KBA has implemented a range of programs and activities that are making progress toward all of these goals.

KEGA provides a broad mandate for the KBA, but it also directly specifies a number of programs and activities. **On the second question, the finding is that the KBA has initiated all of the statutorily defined programs.** Additional details on the progress achieved in each specific

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<sup>3</sup> Kansas Economic Growth Act of 2004. 73-99bo2 (5).

program date are provided in the section on the Funding Mechanism Assessment beginning on page 38.

Statute	Program
74-99b09. (27)	Heartland BioVentures
74-99b61-68	Kansas Bioscience R&D Voucher
74-99b81-88	Kansas Bioscience Matching Fund
74-99b51-60	Bioscience Tax Investment Incentive: Net Operating Loss Reimbursement)
74-99b09.(6) to (12) and (15) to (16)	Kansas Bioscience Eminent Scholars Kansas Bioscience Rising Stars Collaborative Biosecurity Research Initiative Collaborative Cancer Research Initiative Kansas Bioscience Centers of Innovation
74-99b09. (15) and (16)	Kansas Bioscience Expansion & Attraction

In reference to the third question, **the KBA's investments and activities have generated a number of positive benefits and outcomes for the state of Kansas.** As of June 30, 2008, the KBA reported 938 jobs created, based on funds paid of \$16.2 million and total funding commitments of nearly \$56 million. **The cost per job based on the funds paid is \$17,342, which is an impressive indicator for a program that focuses on bioscience development.** Furthermore the KBA has leveraged \$81,983,108 in capital, \$3,674,384 in R&D funds realized and equity investment of \$9,199,614.<sup>4</sup> **The total net investment of \$94,857,106 represents a return of \$5.80 for every \$1.00 in funds paid. These are results that validate the bold commitment made by Kansas in the creation of the KBA.**

<sup>4</sup> All data in this paragraph regarding performance and results was collected from the KBA Outcomes and Pipeline reports.

## Phases of the Kansas Bioscience Authority

### Startup Phase

The KBA has followed a pattern of development not unlike many other technology-based economic development programs in the country. Most such programs are created through a legislative vehicle that is built on compromise between competing interests. Following the passage of the legislation a board must be formed, governance protocols established, staff hired, and programs initiated. The pressure to prove the value of the new initiative is intense as elected officials and key stakeholders are eager to serve the pent up demands for funding or programmatic support.

Much like a start-up company the newly formed Kansas Bioscience Authority was marked by a period that involved an urge to define its value in a short time period. Value in this case was defined as 'wins' that demonstrate for the state legislature, governor and other stakeholders that the commitment to launch this initiative was a sound decision. This time period was marked by a focus more on getting deals done rather than focusing on process and protocols. The work of the KBA was Board driven and staffing support was outsourced.

### Startup Timeline

- Legislation Passed: April 2004
- Board Formed: August 2004
- First Board Meeting: September 2004
- First Application: August 2005
- First Funding Decision: April 2006

### Operations Phase

Continuing the start-up company analogy, the next phase of the KBA's development can be described as a period of Refining the Value. Much like a company the KBA's early accomplishments were met with increased attention and awareness. As a result, the emphasis needed to be placed more on the structure of the organization. It is during this period that the KBA has been focused on implementing policies, processes and protocols for investing their dollars. The work of the KBA is now more staff driven with the board still playing a significant role in the decision-making and policy setting.

The KBA provided a detailed timeline of the activities and accomplishments of the Operations Phase. It is included in Appendix 1: Operations Timeline Provided by the KBA on page 70.

## Major Findings and Recommendations

Overall, GSP Consulting believes that the KBA is a unique economic development entity that is providing significant support to the growth of the biosciences in Kansas.

We have presented the recommendations in terms of three categories. The first category, Priority Recommendations, reflect critical issues in current operations that must be addressed. The second category, Maintain Progress and Monitor, includes issues from the startup phase that the staff and board have largely resolved but require additional effort and monitoring. The third category, Strategic Choices, reflect issues where there are not clearly right and wrong answers, but which alter the strategy of the KBA.

### Priority Recommendations

#### 1. Preserve the Funding Mechanism (See page 60)

The funding mechanism created in the Kansas Economic Growth Act is both unique and effective; **Kansas should most emphatically NOT change the funding mechanism.** No other state program has the kind of stable, dedicated, long-term funding that Kansas has devised. Too often, government budgets over-react to short-term financial crises by decreasing, delaying or discontinuing the funding for programs that provide long-term security and prosperity for the future. Kansas has avoided this scenario with the off-budget diversion of payroll taxes for 15 years. In establishing the KBA, Kansas has also implemented a comprehensive, flexible, and well-balanced strategy. Other states have invested similar amounts, but usually for the purpose of meeting a short-term infrastructure need, or jump-starting a specific technology niche, such as stem cell research or fuel cells, that may limit the ability of the state to adapt its strategy. In other cases, states have been so broad that their investments are dispersed across many sectors and they don't get any feedback and multiplier effects from those investments. The goal of the program was to provide the state of Kansas with another major sector comparable to agriculture, aviation or oil. Accomplishing that task will require stable, patient investment that is unlikely to happen with a legislatively appropriated budget.

#### 2. Monitoring and Evaluating Progress (See page 61)

The process of legislative appropriations however serves a useful function in protecting the public's money. However, Kansas also has a strong tradition of research-based evaluation, through the Legislative Division of Post Audit and Kansas, Inc. These resources provide Kansas legislators with a higher quality and greater depth of evaluative information than is

available to legislators in other states. The KBA currently provides annual reports to the Governor and the Legislature. In addition, the KBA has produced the Bioscience Index to measure its progress and that of the bioscience economy in Kansas. Unfortunately, many skeptics will not be convinced unless the data and analysis are produced by a neutral, objective source. **In order to monitor the progress and performance of the KBA, GSP recommends the following evaluation plan for consideration by Kansas, Inc, KBA, Legislative Division of Post Audit, Department of Labor and Department of Revenue:**

**Once every four years:**

1. Conduct a professional, objective and comprehensive program evaluation. The evaluation should follow a structure similar to the current RFP, but since the KBA should have a greater track record, subsequent evaluations should include the following:
  - a. A survey of bioscience firms and researchers in Kansas (funded and not funded by the KBA).
  - b. Analysis of KBA Impacts
    - i. Working with the Kansas Department of Labor to compare job creation in a matched sample of KBA clients and non-client bioscience firms.
    - ii. Analysis of KBA inputs (staff, funds) and performance outcomes (jobs, capital, R&D, etc.).
  - c. Benchmarking program performance in other states.
  - d. Operational assessment to include review and approval processes as well as level of staff time devoted to clients.

**Annually:**

2. Review annual outcomes and funding distributions
  - a. The Department of Revenue currently tracks the quarterly payroll and withholding taxes to determine the distributions to the KBA. Working with the Department of Labor it should not be a great deal of additional effort to analyze the year-to-year payroll growth for the overall Bioscience sector and to summarize how many sectors within the Biosciences increased or decreased payroll.
    - i. Compare inflation-adjusted payroll growth of bioscience sectors to the level of KBA investment and activity (based on KBA commitments and funds paid).
    - ii. Compare inflation-adjusted payroll growth of bioscience sectors to the U.S. growth rate for each sector.
    - iii. Note: Hospitals must be separated or excluded from the performance evaluation because the growth of hospital payrolls are indirectly impacted by KBA investments, therefore their employment gains or

losses should not reflect positively or negatively on the KBA's performance.

- b. Measure the progress of biosciences as an independent economic sector. Ideally some measure of the contribution to state Gross Domestic Product (GDP) could be used to compare the development of the Biosciences to other leading sectors in Kansas such as Oil, Aviation and Agriculture. Unfortunately, the BEA does not estimate GDP with sufficient industry detail to compare these sectors. Every five years the Economic Census provides estimates of the value of receipts and shipments, but this data is not frequent enough to be useful. Payroll growth is a useful proxy as the bioscience sector is composed of many service industries in which there is a strong correlation between value-added, revenue and payroll. For example Bioscience receipts and payrolls are 16 percent and 17 percent of Aviation receipts and payrolls respectively. The Department of Revenue could track the Bioscience share of total Kansas payroll and compare it to sectors such as Aviation, Oil and Agriculture.

### 3. Nominate more Bioscience Entrepreneurs to the Board of Directors (See page 35)

The Governor and the Legislature, not the KBA, control the nomination and appointment process. There should be a target goal to have at least three entrepreneurs who founded and grew a bioscience firm on the Board of Directors. In order to reach this target goal, the Governor, the House and the Senate should each nominate one entrepreneur to the board when the next reappointments are made.

### 4. Address Communication Gaps (See page 32)

Some of the critiques of the KBA included a lack of awareness around what is going on. Stakeholders should receive a consistent set of communications on what the KBA is doing and supporting. The newsletter provides one mechanism, but several stakeholders claimed to have never seen the newsletter, so staff should insure that its distribution is reaching the key stakeholders.

The KBA's website is constantly updated regarding current projects, board meetings, programs, applications and recent newsletters and articles. This is achieved through annual KBA progress reports, website updates, e-news blasts, e-newsletters, and monthly updates of events. Furthermore, the KBA has conducted seven stakeholder meetings around the state:

- Wichita, September '07 and April '08
- Garden City/Dodge City - October '07
- Topeka - January '08



- Hays/Colby - May '08
- Overland Park - June '07 and July '08

The KBA has also conducted extensive outreach through media releases, interviews, and Op-Eds across the state and nation. The NBAF effort in particular has been the focus on significant communications efforts including regular electronic communications, extensive media outreach, an NBAF in Kansas website, national radio interviews, and specialized educational materials, fact sheets, and collateral pieces. These efforts are not limited to Kansas, but also include significant outreach at the BIO Convention in 2006, 2007 and 2008.

The KBA has also worked extensively with legislators in Topeka and D.C., including the inaugural Kansas Bioscience Day at the Capital and distributing the KBA financial audit and annual report. The KBA President/CEO and staff have provided frequent testimony at legislative hearings and have been meeting individually with members as well.

The outreach and communication efforts described above are valuable and absolutely appropriate activities. Where the KBA is attracting criticism, is in regards to more personal and one-to-one communications. The KBA publishes a program guide and a website, but these documents don't provide all of the answers and partners and clients also need face time to improve their understanding of eligibility issues and application guidelines. Similarly, the website, email blasts and annual reports provide a great deal of information about KBA activities and clients, but it does not completely address the need that partners have to be informed when the KBA interacts with joint clients.

Partners should receive **personal** notification on KBA discussions with joint clients as well as personal updates on the status of any joint clients, before the information is distributed to the general public via press releases or email blasts.

#### 5. Increase R&D Voucher Activity (See page 44)

These projects should not require a lengthy review, nor do they require significant staff resources and there are many positive impacts from these projects, so the KBA can and should be able to greatly increase the level of activity. Comparable programs have funded at least twice as many industry-university commercialization projects within their first four years.

Ongoing efforts to develop and commercialize new products and services, such as those supported by the R&D Voucher program should be enhanced and increased in volume. Since these projects are risky, volume is needed to produce results. However, these projects should not require significant staff effort for due diligence or mentoring when there is a university partner because the funding is limited to \$100,000 to \$500,000; matching funds are required so the financial commitment of the partners and the approval process of the university also provide validation of the project. Furthermore,



one of the goals of these kinds of programs is to promote more cooperation between the private sector and universities, so these projects achieve some success even if the resulting technology is not viable. In fact, the KBA should expect that a portion of these projects will fail, but that the partners will learn from that failure and do better next time. That is part of the reason why volume is needed and why so many of these programs in other states limit the amount of these awards to the same range provided by the KBA (\$100,000 to \$500,000). The KBA needs to balance its due diligence with a reasonable level of risk-taking so that the KBA's due diligence, review standards and staff capacity is not a barrier to the development of industry-university partnerships in the state of Kansas.

Based on our benchmarking of programs similar to the R&D Voucher program, the KBA should be able to support 20-30 projects annually with two full-time staff supported by external reviewers and support staff. This staffing level does not include staff or volunteers that may be involved in mentoring and developing bioscience firms. With an estimated 440 to 980 non-hospital bioscience firms, as well as hundreds of bioscience researchers at the universities, as well as an unknown number of bioscience entrepreneurs. If we then assume that there are only 1,000 to 1,500 eligible candidates (companies, researchers and entrepreneurs) then the KBA should have a pool large enough to find 20 worthy R&D Voucher projects each year for the next five years, and still have only funded ten percent of the potential in Kansas, assuming no additional demand is created. This evaluation recommends a more streamlined approval process that could boost the number of R&D Voucher awards.

Approval should be competitive based on the reviews by external experts and staff approval, and the understanding that the universities and their partners are also assuming some risk and the universities in particular have internal processes for approving research activity that provides some validation of its scientific merit. Projects that have no university partner may have to be treated differently. The board should authorize staff to award up to \$2 million per quarter in this program for projects that have a university partner without prior board approval. The increased level of activity and experience should generate better proposals and projects in the long-run and it will provide a greater incentive for university researchers to seek out industry partners and vice versa.

## Maintain Progress and Monitor

These recommendations reflect issues from the startup phase that have largely been resolved, but which require vigilance and additional effort in order to maintain the progress achieved.

### 1. Increase Transparency of Board Operations (See page 35)

The current policy states:

This [conflict of] interest shall be set forth in the minutes of the Authority, and no Director, employee or other agent or advisor having such interest shall participate on behalf of the Authority in the authorization or any such contract or transaction.

The KBA should implement a clear universal recuse and excuse policy for any board member for both discussions and votes with any project where there is a conflict of interest. A suggested revision:

This [conflict of] interest shall be set forth in the minutes of the Authority, and no Director, employee or other agent or advisor having such interest shall participate on behalf of the Authority in the [discussion] or authorization or any such contract or transaction.

### 2. Monitor Staffing as Activity Increases (See page 33)

The KBA has very few staff for the level of financial commitments compared to the peer organizations that were reviewed. There is little interest in seeing the KBA become a large, heavily staffed operation, but it should maintain a reasonable staff level, for example, 1 FTE per \$5 million in active investments. This would keep the KBA as the leanest of the benchmark organizations. The KBA is currently close to this benchmark, but as staff are added and the KBA's resources expand, they should avoid becoming so lean that they are unable to provide due diligence without slowing innovation in the bioscience sector. If there are 50 worthy projects but the KBA only has staff to manage 20, then there is need for more staff. GSP Consulting believes that the KBA understands this very well, but that critics of the KBA do not. The KBA is not overstaffed at the current time and it should add staff as the volume of activity grows to remain near the 1 FTE per \$5 million in active investments benchmark.

### 3. Maintain Focus on High Quality Projects (see page 30)

The KBA's balance between the quality and level of innovation on the one hand and the sectoral and geographic interests on the other, are on target. The KBA should continue to fund the highest quality projects first, with geographic balance a secondary consideration. The KBA should maintain more balance between industry projects and big tickets like Science Parks and NBAF that have a long impact horizon.

## Strategic Choices

These recommendations address issues that have no clear right or wrong answer. They are, as we have described, strategic choices which involve tradeoffs that have to be considered and managed by the KBA and its Board.

### 1. Need for Balanced Strategy (See page 26)

The KBA has a balanced strategy – as dictated by statute and supported by the reasons outlined below. The early emphasis on attracting private sector firms has given way to a greater emphasis on university and nonprofit led projects that have a longer payback time. Since each strategy, attraction, commercialization and entrepreneurship have different strengths and weaknesses; a strong bioscience strategy has to encompass them all. There are no clean guidelines for how to allocate the effort between these programs. In order to maintain the flexibility of the KBA, we have presented the following as a guide for the ongoing strategic choices the organization will have to make. More information is provided on page 26.

**Table 2: Reasons for a Balanced Strategy**

Strategy	Pro	Con
Attraction	<ul style="list-style-type: none"> <li>• Produces jobs impacts within 3 years.</li> <li>• Easiest to attribute credit for the result.</li> </ul>	<ul style="list-style-type: none"> <li>• Can only respond to opportunities.</li> <li>• Limited number of projects per year with significant competition.</li> <li>• Fewer local B2B links.</li> <li>• Management and labor is oriented to corporate ladders not local market.</li> </ul>
Commercialization	<ul style="list-style-type: none"> <li>• More local B2B links.</li> <li>• Many indirect benefits.</li> <li>• Can create entire new industries that provide long term competitive advantage.</li> <li>• Requires moderate staff effort.</li> </ul>	<ul style="list-style-type: none"> <li>• Job impacts not realized for 2-4 years.</li> <li>• Each project is risky; need volume to generate impact.</li> <li>• Longer timeframe blurs the link between assistance and success.</li> </ul>

Strategy	Pro	Con
Entrepreneurial	<ul style="list-style-type: none"> <li>• Most local B2B links.</li> <li>• Entrepreneurs never really “fail” if they learn and try again – initial assistance can provide long-term impact.</li> <li>• Entrepreneurs beget more entrepreneurs – initial assistance is magnified.</li> </ul>	<ul style="list-style-type: none"> <li>• Job impacts not realized for more than 3 years.</li> <li>• Significant staff effort is required.</li> <li>• Each project is risky; need volume to generate impact.</li> <li>• Longer timeframe blurs the link between assistance and success.</li> </ul>
Research Capacity Building	<ul style="list-style-type: none"> <li>• Has the potential for extremely large returns.</li> <li>• Promotes diversification and adaptation that can sustain the economy during periods of transition.</li> </ul>	<ul style="list-style-type: none"> <li>• The return on investment is often measured in decades.</li> <li>• It is difficult to sustain these investments on only soft returns such as partnership development and new collaborations.</li> </ul>

## 2. Managing Mission Creep

While individuals or some groups expressed definite preferences, across the categories of the board, staff, officials, clients and partners there were no strong or consistent opinions. However GSP felt that these issues may warrant further consideration in the evaluation particularly as it relates to the tension between the need to maintain focus versus addressing the broad range of needs that intersect with the biosciences.

- For example, what should be the KBA’s level of involvement in the Bio-Energy efforts?

The KBA has recently formed a sub-committee to explore the opportunities and their role in Bio-Energy. In many states this role would be assigned to a policy group such as the Kansas Energy Council (KEC). We recognize that a set of energy policy and activity recommendations has been developed by the KEC and public comment period opened on September 11<sup>th</sup>. One of the recommendations requests that KBA set aside a portion of its funding for R&D focused on biomass-fueled electric generation. Such a requirement coming from a third-party would set a precedent that should concern anyone associated with the KBA’s creation and future success. Such actions will over time limit the KBA’s ability to achieve success through a strategic focus on the biosciences.

The KEC at its meeting on August 13, 2008, advanced 15 recommendations for further discussion and public comment. The second recommendation is reproduced below:

2. *Encourage the Kansas Bioscience Authority to allocate some of their funds to research and development related to biomass-fueled electric generation, including the analysis of carbon footprint.*<sup>5</sup>

The KBA responded to the initial draft of this evaluation with the following comment:

*With respect to bioenergy, the KBA has developed an advisory committee chartered with developing a clear investment approach in the bioenergy realm. Neither this committee, nor the KBA board of directors has endorsed in any way the stated recommendations of the Kansas Energy Council."*

However, according to the KBA's website, they awarded \$300,000 to Kansas State University on October 28, 2008 for the following project:

Kansas State University, Manhattan, Kansas

The KBA awarded \$300,000 to Kansas State University to create a county-level inventory of biomass resources such as agricultural crop residues; grain and oilseed crops; and herbaceous energy crops. As part of the KBA's development of a strategic plan to advance the state's national bioenergy leadership, this data will highlight opportunities for the state as its bioenergy sector expands to help the country meet the National Renewable Fuels Standard, which federally mandates a significant increase in non-corn based biofuel use (10/28/08).

Source: [http://www.kansasbioauthority.org/projects\\_funded/](http://www.kansasbioauthority.org/projects_funded/). Accessed November 13, 2008.

**There is no conflict where Biosciences and Bio-Energy overlap and this particular project is in line with the KBA's existing strategy, but the KBA needs to maintain its focus on the Biosciences, funding research, innovation and**

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<sup>5</sup> Kansas Energy Council. 2008 Preliminary Policy Recommendations. Accessed from [http://www.kec.kansas.gov/2008\\_prelim\\_policy\\_recommendations.htm](http://www.kec.kansas.gov/2008_prelim_policy_recommendations.htm) on November 13, 2008.

commercialization. One \$300,000 project does not in itself indicate that the KBA has expanded its mission. If the KBA expands the mission into new sectors before the organization has a chance to mature, it will harm its long-term success. It has not expanded too far as yet, but the example above indicates the need for caution. In order for the KBA to resist the pressures to expand its mission, the KBA Board must build clear support for maintaining a focused strategy with key stakeholders, some of whom view the KBA as a bank rather than as a resource dedicated for a strategic purpose. The KBA was specifically established as a separate entity in order to insulate the funding from political pressures.



## Statutory/ Agency Assessment

This aspect of the evaluation required that GSP Consulting provide a detailed analysis of the progress and accomplishments of the KBA since its inception. Our analysis began with the development of an understanding of the goals and activities of the KBA and concluded with a review of the KBA's current goals and activities. The following section highlights our findings as they relate to the current state of operations.

### Progress

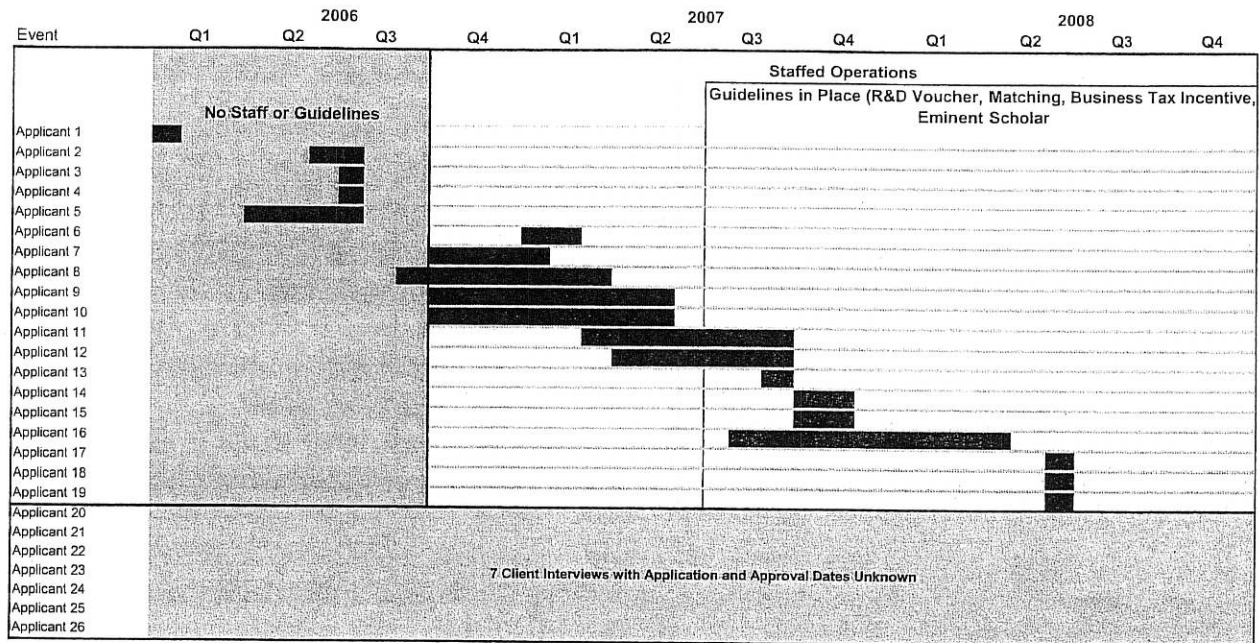
The inescapable question for the Bioscience Authority is whether there has been sufficient progress since the legislation passed in 2004. **On one hand the KBA has outperformed its peers with regards to projects supported and funds committed.** On the other hand community stakeholders believe that more could be done. The KBA did not award its first projects until 2006. Of the interviews conducted, only one board member and one client believed that sufficient progress has been made. There was unanimous acknowledgement that the organization has endured an extended growth phase with the transition to a staffed organization in 2006.

Despite this caveat, twelve respondents (28 percent) including partners, clients, board members and officials expressed disappointment with the progress to date based primarily on the time it has taken to complete the leadership transition, to launch entrepreneurial support services (Heartland BioVentures became operational in FY 2008), and to develop program guidelines. According to the KBA's timeline, the program guidelines were developed and approved by June or July of 2007, which would represent nine to ten months from the date that the first staff was hired and 34-35 months from the initial board meeting in September 2004 (Appendix 1: Operations Timeline Provided by the KBA, see page 70). Similar organizations have been able to produce guidelines in far less time than nine or ten months. These types of programs are prevalent across the United States; therefore models for these guidelines can be readily obtained from state and program websites; and that associations such as the State Science and Technology Institute provide resources for such activities.

Guidelines and processes have been established since June or July of 2007. The clients funded in this most recent round of projects still experienced a significant amount of changes in the application processes, such as variations in the forms and formats for the applications within one to two weeks of the deadline. All but one of the clients interviewed expressed frustration with the application process - the interviewers confirmed that these comments refer to changes in forms and formats as opposed to requests for clarification or more information. It is difficult to establish firm guidelines for funding decisions related to startup companies or technology innovation, but once an RFP has been issued, it should only be changed to reflect critical or substantive gaps in the RFP, not simple formatting changes. Changes in the style or format of the application should wait until the next application round.



**Figure 1: Clients Interviewed, Application and Approval Dates and KBA Phases**



The interviews conducted for this evaluation represent a range of client experience across different phases of the KBA's history. The recommendations and conclusions in this evaluation focus on the issues that are currently relevant because they reflect recent experience, or because additional progress and vigilance is required to resolve these issues. Figure 1 demonstrates that seven of the interviews included applications during the time before staff and guidelines were in place. Fourteen of the interviews included applications that occurred during the staffed operations of the KBA (although one of these clients applied before staff was hired). Two of the interviews reflected the transition from no guidelines to guidelines, while another seven interviews represented the time when guidelines were in place. GSP Consulting also interviewed a number of clients who applied but were not funded, but these clients are not tracked on the Pipeline report in any form and have not been included in the counts above and are not included on Figure 1. For some clients, the application dates are not reported, which makes it difficult to accurately place them on this timeline (see Figure 2). Finally, seven of the applications among the clients interviewed had no application or approval date identified in the KBA's Pipeline Report as of August 27, 2008 and no dates could be found on the KBA website.

Figure 2: Sample of the KBA Pipeline Report, 8/27/2008



Kansas Bioscience Authority -- Pipeline Report

8/27/2008

	Application Date	Board Approval Date	KBA Funding	Pre-App	Program Sub.	App. Review	Due Diligence	Invest. Comm. Approval	Board Approval	Board Dec.
<b>Equity</b>										
KC BioMedX Equity II		7/15/2008	\$400,000							
Kansas Bioscience Fund		5/25/2007	\$100,000							
KRACK Project Debt										
ImmunoGenetic Equity		6/5/2008	\$400,000							
COATech Equity Investment										
Manufacture Drug Development										
KC BioMedX Equity Investment	5/1/2007	7/31/2007	\$150,000							
Genova Equity Investment	5/29/2007	7/30/2007	\$450,000							
VividScreen Pharmaceuticals	11/20/2007	7/15/2008	\$200,000							
Victoria Plant Expansion	11/1/2008	8/5/2008	\$2,700,000							

Note: This image is difficult to read, but it is apparent that the application dates are missing for several clients who have been approved by the board.

Some delays are beyond the control of the KBA. If a client provides incomplete information or the review and due diligence process uncovers the need for more information, then the delay reflects that the KBA is simply doing its job in vetting the investments and making informed decisions. Any given investment may be dependent upon the applicant raising matching funds or receiving notice of a federal award. This type of delay is completely out of the hands of the KBA. Lengthy delays may be unavoidable, but they should be the exception rather than the rule. The KBA's pipeline report and other reports reviewed for this evaluation do not comprehensively report the initiation of a client, the application date and board approval dates that would enable an analysis of whether the clients are moving through the pipeline at a reasonable rate, and whether there is a reasonable number of exceptions that are experiencing significant delay. The KBA's BizTracker should be able to produce reports of the average, median, minimum and maximum times for applications and approvals that could help to establish benchmarks for each program. GSP Consulting did not request this kind of information from the KBA, but it believes that it could be produced by BizTracker if the missing application dates were resolved.

Table 3: Kansas Bioscience Authority Compared to Peer Initiatives

Program	Development	Focus of Program	Accomplishments
Kansas Bioscience Authority	Created in April 2004	Broad bioscience mission	In its first four years: 58 projects funded for a total of \$16.2M, 3 eminent scholars; \$3.2M in R&D funding attracted and \$9.2M in equity funding for 5 companies; nearly \$60M in total funds committed.
South Carolina Centers of Economic Excellence	Created in 2002, awarded the first project in June 2003	Broad bioscience mission	In the first four years: 29 Centers were awarded \$85.5M; 10 spin-off companies launched; 7 endowed chairs recruited; \$41.3M in R&D funding attracted: total spending of \$118M
Utah USTAR	Created in March 2006	Faculty recruitment	In three years attracted 15 new faculty (12 in bio): \$19.5M
Pittsburgh Life Sciences Greenhouse	Legislation in 2001; Initiated in 2002	Broad bioscience mission;	In its first seven years the PLSG has invested \$11.5M in 50 firms; invested \$15.2M in VC funds; attracted \$14M in SBIR funding, trained 6,000 biotech workers; mentored 200 companies with the Executive in Residence Program. .

Source: GSP Benchmarking Analysis.

Economic development organizations aren't typically open to sharing performance information, but GSP did find comparable data from several programs that started at nearly the same time as the KBA. This gives us an opportunity to look at something more objective than client or management statements. The benchmark programs generally did not take nearly two years before their first actual projects were funded (See Table 3).

The benchmark programs use similar application and review processes so there is no reason to believe that they have been less rigorous in their due diligence. **Compared to these benchmarks, the KBA has committed more funds (\$56 million) and initiated more total projects (58), so despite the slow start, the KBA has caught up quickly.** If you time its operations from the award of its first project in 2006, then the progress has been tremendous. Some of the comparison programs have front-loaded payment schedules or withhold only the final 10-25 percent of the award until the project is complete. As a result, the KBA's milestone based payment system accounts for part of the gap in disbursements between the KBA and the benchmark programs.

Kansas has invested a competitive amount of money compared to most states. Only a few states have invested more money directly into the biosciences. Kansas has developed a funding source that is more stable and predictable than traditional legislative appropriations. The

elimination of the Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) matching fund program in Illinois highlights the uncertainties and volatility when program funding is allocated annually through a state's general fund appropriation process. The process of a firm working with the SBIR and STTR program can stretch over months or even a year from the initial introduction to the program to finally submitting an application. Illinois firms that considered the matching funds in their planning process might have wasted scarce time and staff resources, which most small firms can ill afford. Our evaluation indicates that the long-term commitment by Kansas to this initiative will create an enhanced sense of financial security by both in-state and out-of-state businesses looking to grow their operations in the state.

**The KBA has excelled in increasing the internal and external recognition of Bioscience in Kansas.** Within the bioscience community in Kansas, there was no one who could identify anyone that was not aware of the KBA even if they did not have a depth of knowledge of the program specifics. Outside of Kansas, there is a tremendous level of awareness of the KBA throughout the bioscience community and the technology development community. Kansas is also enjoying new recognition from national benchmarking reports, such as the Milken Index and Battelle's report for Bio International, the leading international bioscience trade association. In addition the national site selection magazine, *Business Facilities*, recently listed Kansas in the top ten for overall biotechnology strength. **These types of recognition can be traced to the activities of the KBA.**

### Analysis of the KBA's Funding Commitments

As part of this evaluation, GSP Consulting reviewed the portfolio of funding commitments made by the KBA. <sup>6</sup> The pace of activity has accelerated steadily each year as more funding and staff has been focused on the efforts; 55 percent of the total funding has been committed during the 2007-2008 program year.

**Table 4: KBA Funding Awards by Category and Year**

Sector	Data	Award Year			Grand Total
		2005-2006	2006-2007	2007-2008	
Local Government	Projects		1		1
	Funds Committed		\$ 1,000,000		\$ 1,000,000
Nonprofit	Projects	2	14	11	27
	Funds Committed	\$ 300,000	\$13,939,588	\$19,354,954	\$33,594,542
Private Companies	Projects	4	11	15	30
	Funds Committed	\$ 4,325,000	\$ 5,405,700	\$11,654,170	\$21,384,870
Total Projects		6	26	26	58
Total Funds Committed		\$ 4,625,000	\$20,345,288	\$31,009,124	\$55,979,412

Source: KBA Outcomes Report, sector classification by GSP. Totals for 2008 reflect activity through June 30, 2008.

<sup>6</sup> Funding commitments may not equal final funds provided due to changes in project budgets.



There have been three categories of organizations that have received KBA funding including government, nonprofit, and private sector companies. The nonprofit category includes colleges and universities. One area to note is that during calendar year 2007 the share of financial commitment shifted from the private sector to nonprofits so the awards are more balanced between nonprofit, mostly university projects and projects with private sector companies. Awards to private sector recipients accounted for 67 percent of the projects and 94 percent of the funding commitments in 2005–2006, but the split in projects has been nearly even since. Total awards and awards to the private sector have been growing, but the proportion of funding committed to the private sector in 2006–2007 and 2007–2008 has been lower than in 2005–2006.

**Table 5: Percentage of Funding to Private Sector by Year**

<b>Private Sector share of total:</b>	<b>2005-2006</b>	<b>2006-2007</b>	<b>2007-2008</b>	<b>Grand Total</b>
Projects to Private Sector	67%	42%	58%	52%
Funds Committed to Private Sector	94%	27%	38%	38%

Source: KBA Outcomes Report, sector classification by GSP.

The legislative mandate of the KEGA of 2004 stipulates that the KBA should provide funding throughout the bioscience lifecycle. The legislation does not specify what the funding balance should be between private sector, university, infrastructure or other investment opportunities. The KBA’s Board of Directors therefore has the task of striking this balance. There are no firm guidelines from the experience of other states or nations that would specify how this balance should be achieved. It is also clear from the stakeholder interviews that there is no clear agreement what this balance should be – whether the KBA should focus on private sector investments that provide a more immediate return in funding and jobs, or whether the KBA should focus on university projects that will provide a potentially greater, but longer term and more indirect benefit to the state. Different external stakeholders expressed opposing viewpoints on what this balance should be and whether the KBA is achieving it. **On the one hand, several respondents criticized the KBA for funding too many private sector projects. Other respondents criticized the KBA for funding too many university projects. Some of the criticism reflects the factions that support either the previous or the current leadership.**

This evaluation makes no recommendation about what the balance should be between private sector and other projects other than supporting the legislative mandate that they KBA do both as it determines the strategic interest of Kansas. Regardless, the KBA should be aware that this criticism is prevalent. This report notes what that balance has been and recommends that the KBA closely track and report this balance so that it can at least counter some of the criticism with a simple fact sheet or FAQ section on the website of the actual shares of funds to each sector. As the KBA considers what this balance should be, we note that the projects with nonprofit recipients have yet to yield any reported job creation. The private sector projects are

generating far more jobs per \$100,000 in funds paid, which may reflect the fact that these projects have had more time to generate results, but also that they are more likely to produce short-term results.

**Table 6: Jobs Created per Category of Project**

	Jobs per \$100,000 Paid			Grand Total
	2006	2007	2008	
Local Government	6.0			6.0
Nonprofit	-	-	-	-
Private	16.3	0.7	-	8.2
Average for All Projects	15.0	0.4	-	5.8

Source: KBA Outcomes Report, Reflects funds paid based on milestone achievement through June 30, 2008. This data is based on calendar years to match with state and federal employment numbers. While we regret any confusion this may cause with job numbers reported by the KBA fiscal year accounting, but it is the only way to compare KBA performance with state and federal employment numbers.

The KBA investments have more outcomes than jobs and the nonprofit investments in particular produce results besides jobs. The nonprofit investments have resulted in \$18.5 million in capital expenditures and \$750,000 in equity investment. The bulk of the R&D funds have been attracted by the private sector clients with 76 percent of the research funds going to one client attracted in 2007.

While the early attraction deals have created the majority of the jobs, this strategy does not provide a firm basis for building a bioscience sector. Transplanted firms are more likely to cut or shift jobs from branch locations (be it manufacturing facility or research laboratory) when financial times are tough. Research has shown that locally-based firms tend not to cut jobs as quickly or deeply. Locally based firms also tend to develop more local supplier networks and therefore have a higher multiplier effect. Transplanted firms tend to have longer supply chains, so the local economy gets less benefit from the multiplier effect of business to business transactions.<sup>7</sup>

Attraction efforts must be opportunistic. There is little that the KBA can do to generate opportunities, although it can prepare for them. A key element of preparation is to prioritize potential attraction candidates. By surveying bioscience firms in Kansas, the KBA can identify

<sup>7</sup> Markusen, Ann. 1996. Sticky Places in Slippery Space: A Typology of Industrial Districts. *Economic Geography*, Vol. 72, No. 3 (July): 293-313. Hodge, Ian and Whitby, Martin Charles. 1981. *Rural Employment: Trends, Options, Choices*. New York: Routledge; see also Barkely, David. 1980. Regional manufacturing employment cycles revisited. *The Annals of Regional Science*. Vol. 15, No. 1 (March): 66-82. See also the Lehigh Valley and New River Valley case studies in Paytas, Gradeck and Andrews. 2004. *Universities and the Development of Industry Clusters*. Economic Development Administration Award Number 99-07-1382. Center for Economic Development: Pittsburgh, PA.

suppliers and customers of in-state firms, as well as gaps in local supply chains. These high-priority leads can be passed to the Department of Commerce. How much the KBA should allocate to attraction projects will depend on the number and quality of projects that result.

Ongoing efforts to develop and commercialize new products and services, such as those supported by the R&D Voucher program should be enhanced and increased in volume. Since these projects are risky, volume is needed to produce results. However, these projects do not require significant staff effort for due diligence or mentoring. Based on our benchmarking of similar programs, the KBA should be able to support 20–30 projects annually with two full-time staff supported by external reviewers and support staff. This staffing level does not include staff or volunteers that may be involved in mentoring and developing bioscience firms. With an estimated 440 to 980 non-hospital bioscience firms, as well as hundreds of bioscience researchers at the universities, as well as an unknown number of bioscience entrepreneurs. If we then assume that there are only 1,000 to 1,500 eligible candidates (companies, researchers and entrepreneurs) then the KBA should have a pool large enough to find 20 worthy R&D Voucher projects each year for the next five years, and still have only funded ten percent of the potential in Kansas, assuming no additional demand is created. This evaluation recommends a more streamlined approval process that could boost the number of R&D Voucher awards (see page 11).

Since each strategy: attraction, commercialization and entrepreneurship have different strengths and weaknesses; a strong bioscience strategy has to encompass them all and the KBA is legislatively mandated to address all of these program areas. There are no settled guidelines for how much effort to allocate to each as these are strategic choices. This evaluation supports the need for a balanced strategy and has provided Table 7 to outline the pros and cons of each individual strategy to demonstrate the reasons why the KBA's balanced approach should be sustained, despite criticism by advocates who favor a more specific focus.



Table 7: Reasons to Support the KBA's Balanced Strategy

Strategy	Pro	Con
Attraction	<ul style="list-style-type: none"> <li>• Produces jobs impacts within 3 years.</li> <li>• Easiest to attribute credit for the result.</li> </ul>	<ul style="list-style-type: none"> <li>• Can only respond to opportunities.</li> <li>• Limited number of projects per year with significant competition.<sup>8</sup></li> <li>• Fewer local B2B links.</li> <li>• Management and labor is oriented to corporate ladders not local market.</li> </ul>
Commercialization	<ul style="list-style-type: none"> <li>• More local B2B links.</li> <li>• Many indirect benefits.</li> <li>• Can create entire new industries that provide long term competitive advantage.</li> <li>• Requires moderate staff effort.</li> </ul>	<ul style="list-style-type: none"> <li>• Job impacts not realized for 2-4 years.</li> <li>• Each project is risky; need volume to generate impact.</li> <li>• Longer timeframe blurs the link between assistance and success.</li> </ul>
Entrepreneurial	<ul style="list-style-type: none"> <li>• Most local B2B links.</li> <li>• Entrepreneurs never really "fail" if they learn and try again - initial assistance can provide long-term impact.</li> <li>• Entrepreneurs beget more entrepreneurs - initial assistance is magnified.</li> </ul>	<ul style="list-style-type: none"> <li>• Job impacts not realized for more than 3 years.</li> <li>• Significant staff effort is required.</li> <li>• Each project is risky; need volume to generate impact.</li> <li>• Longer timeframe blurs the link between assistance and success.</li> </ul>
Research Capacity Building	<ul style="list-style-type: none"> <li>• Has the potential for extremely large returns.</li> <li>• Promotes diversification and adaptation that can sustain the economy during periods of transition.</li> </ul>	<ul style="list-style-type: none"> <li>• The return on investment is often measured in decades.</li> <li>• It is difficult to sustain these investments on only soft returns such as partnership development and new collaborations.</li> </ul>

<sup>8</sup> Determining a precise number is very difficult especially for Biosciences which is not tracked as a sector. Site selection experts generally claim 500-1,000 significant expansion and relocation projects each year, but this ignores many internal or smaller projects. According to IBM's Global Investment Locations Database there are approximately 8,000 cross-border locations each year around the world, with 1,600 to 2,000 in the U.S. Based on its share of overall US industry then the Biosciences estimate would be less than 10 total projects per year. Based on change of address data for bio-related businesses, GSP has estimated approximately 50 bioscience relocations annually of any distance in the U.S.

Entrepreneurial activities are some of the most staff intensive, if you provide the high quality, intensive mentoring that is required. Programs that provide 20-60 minutes of technical assistance to a large volume of clients generally see limited success per client. Entrepreneurial development provides the strongest local business to business links as the entrepreneur develops their networks. More importantly is that entrepreneurship is a "learning by doing" activity, so the people who work with an entrepreneur tend to become entrepreneurs themselves. The downside is that each entrepreneur has a high risk of initial failure and it may be several years and several attempts before an entrepreneur has a significant success.

**Table 8: Kansas Phase I SBIR 2003-2007**

		Awards	Proposed	Success Rate
All Agencies	FY 2003	11	75	15%
	FY 2004	13	78	17%
	FY 2005	8	87	9%
	FY 2006	7	97	7%
	FY 2007	4	49	8%
National Institutes of Health (NIH)	FY 2003	4	13	31%
	FY 2004	4	18	22%
	FY 2005	0	15	0%
	FY 2006	6	18	33%
	FY 2007	0	7	0%

Source: State Science and Technology Institute. (There are two distinct phases of the SBIR Program, Phase I and II. Phase I only is included in Table 8 because an entity must qualify for Phase I before qualifying for Phase II. The figures for Kansas would be higher if Phase II was included in the calculations.)

Most of the interviews believed that the KBA was successful in attracting research dollars to Kansas, with only a few individuals dissenting. The actual track record is mixed. So far, nearly \$3.7 million in R&D funding has been realized in Kansas out of a projected total of more than \$55 million committed. Kansas has had a volatile success rate in winning SBIR awards. The Federal Matching program should help, but the KBA's first matching fund awards were only made near the end of 2007. The FY2008 success rate should be higher, but the KBA should also be able to increase its volume of activity. The state has never received more than 13 total SBIRs. Another \$34.9 million of the total R&D activity is expected to come from the three recently approved Eminent Scholars over the next five to ten years, so we will have to wait to verify the actual yield from these investments.

There are several KBA programs launched just more than one year ago that should result in additional federal investment in the state in the future. These programs include the Eminent Scholars Program, Rising Stars Program, Matching Fund, and Matching Fund - Entrepreneurs. In

addition, the KBA has partnered with bioscience institutions to advocate for the National Bio and Agro-defense Facility (NBAF), which would represent an enormous federal R&D investment for Kansas. Furthermore, the KBA and Kansas Technology Enterprise Corporation (KTEC) recently launched the SBIR Resource Center to market the SBIR program to entrepreneurs, offer proposal development guidance and provide matching funds. This effort should address the need for a more focused program to increase the quality and quantity of SBIR and STTR proposals.

**Table 9: Leverage Provided by KBA Investments**

Sector	Other Realized Outcomes		
	Capital Expenditures	Research Dollars	Equity Investment
Local Government	\$ 5,650,000		
Nonprofit	\$ 18,100,000		
Private Sector	\$ 58,233,108	\$ 3,674,384	\$ 9,199,614
Grand Total	\$ 81,983,108	\$ 3,674,384	\$ 9,199,614

Source: KBA Outcomes Report, Reflects funds paid based on milestone achievement through June 30, 2008.

When analyzing job creation and industry sector employment it is critical to evaluate not just the raw results from a particular state but to review those figures in the context of the national trends. At this time it is too early to judge the job creation performance of the KBA. There are two critical points of caution. One is the Biosciences have been defined so broadly that it is difficult to connect the performance of the KBA to the trends in overall Bioscience employment. Hospitals account for eighty percent of the jobs in the Biosciences in Kansas. The activity of the KBA will not directly increase hospital jobs.<sup>9</sup>

As Table 10 demonstrates Kansas outperformed the national trend in terms of job creation/ job loss in the bioscience industry in 2002–2004, before the KBA was initiated and also after the first projects were funded in 2006–2007. In the period after the legislation was passed in 2004 and the first projects were funded in 2006, Kansas lost jobs in the Biosciences. The kinds of investments made by the KBA generally require several years before the results of the investments are fully realized. Business attractions generally require 1–3 years before employment ramps up, while technology commercialization or innovation-based investments can take 3–7 years before the employment gains are fully realized. The majority of the jobs created by the KBA were the result of the initial investments in 2006. In fact, 77 percent of the jobs resulted from one investment. It is not unusual for one or two “home-run” projects to dominate the impact of technology investment programs.

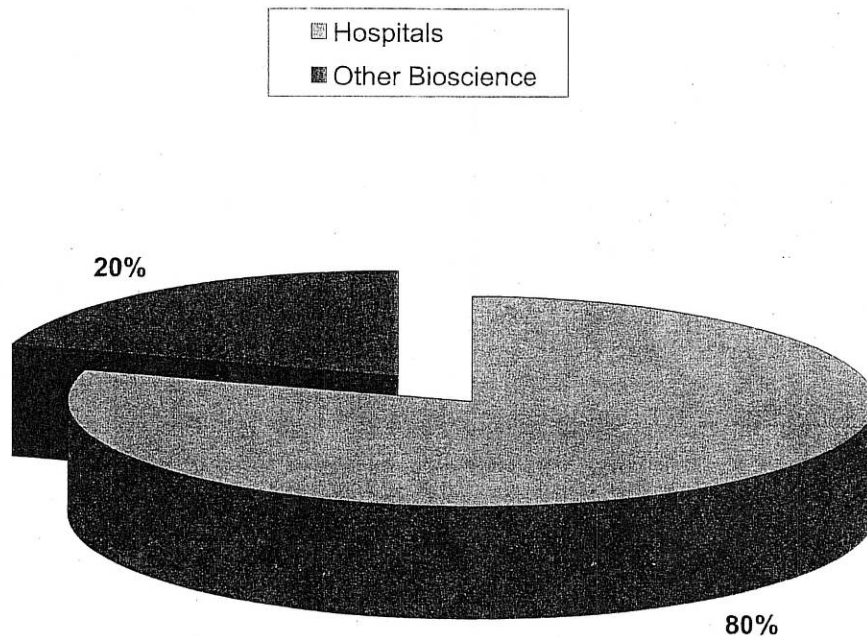
<sup>9</sup> The Docking Institute at Fort Hays State University recently completed the Kansas Bioscience Index 2008, which does not include hospitals in the estimate of private Bioscience employment. For this reason, the numbers in the Docking Institute report will differ from the numbers cited in this report. Hospital employment was counted in this evaluation because they are included in the KBA program guidelines.

**Table 10: Kansas Bioscience Employment Trends  
(Including Private Companies and Hospitals)**

	Absolute Change	Percent Change	
		Kansas	United States
2002-2004	3,479	5.5%	2.8%
2004-2006	(828)	-1.2%	3.4%
2006-2007	1,197	1.8%	1.6%

Source: U.S. Bureau of Labor Statistics

**Figure 3: Kansas Bioscience Sectors, 2007**

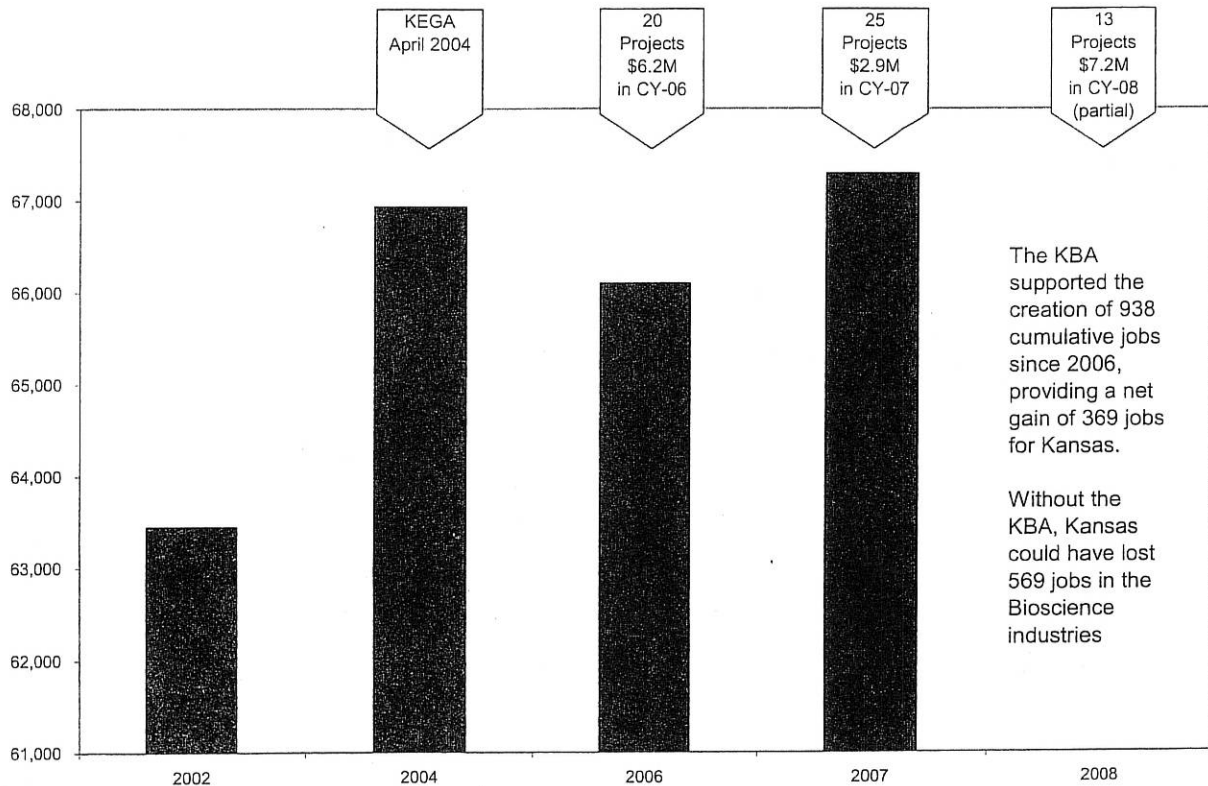


Source: U.S. BLS, Quarterly Census of Employment and Wages for Kansas, 2007.

The policy issue for the KBA is that many of the investments being made today will not produce significant numbers of jobs for several years and the KBA's funding is driven by payroll taxes, largely from hospitals which are not directly affected by KBA programs. Significant job loss in the healthcare industry would negatively impact the KBA both in terms of the perceptions of its performance and its funding stream and could obscure any employment growth attributed to the KBA's funding of the other twenty percent of the bioscience industry. A hypothetical situation such as a "restructuring in the healthcare industry or some other prolonged decline in employment" may not provide a sufficient basis for redefining the KBA funding mechanism, or its investment strategy, but this evaluation would be remiss if it failed to point out what could

be a significant risk to the ability of the KBA to fulfill its mission that it ignores at its own peril. The central issue is that the funding mechanism is in fact only loosely connected to the performance of the KBA. The KBA is therefore limited in its ability to "grow its own revenue" because it cannot directly impact 80 percent of the employment that drives the withholding taxes that support the KBA's operations and investments.<sup>10</sup>

**Figure 4: The KBA's Impact on Kansas Bioscience Employment**



Source: U.S. Bureau of Labor Statistics and KBA Outcomes Report.

In addition to looking at the employment statistics it is critical to review the start-up of new firms in the state. Overall there were 65 net new bioscience establishments created in Kansas from 2004 to 2006, while 12 firms moved or closed from 2006-2007 for a net gain of 53 from 2004 to 2007. These new establishments may reflect the indirect effect that the KBA is having on the Bioscience industry.

<sup>10</sup> The original legislation passed in 2004 session did not include hospitals in the definition of the biosciences but the statute was changed to include hospitals in the 2005 session.



**Table 11: Change in Bioscience Establishments, 2002-2007**

	2002	2004	2006	2007
Establishments	965	990	1,055	1043
	2002-2004	2004-2006	2006-2007	2004-2007 (net)
Gain or Loss	25	65	-12	53

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

The level and length of the commitment to Biosciences represented by the KEGA and KBA increases the confidence of investors and executives that Kansas is a good place to invest and grow a bioscience business; however we cannot now prove this assertion. The KBA's attraction efforts have resulted in 6 firms relocating to Kansas that have verified job creation as of June 30, 2008. The KBA initiated Heartland BioVentures in FY 2008 with the specific aim to promote the formation of bioscience startups, but at the time of this evaluation there have been no *verified* entrepreneurial startups that have resulted from direct KBA investments.

**Table 12: Kansas Bioscience Employment**

	Employment	Cumulative KBA Jobs
2002	63,446	
2004	66,925	
2006	66,097	926
2007	67,294	938
2008	TBD	TBD

Source: U.S. Bureau of Labor Statistics and KBA Outcomes Report. These numbers are presented on calendar year basis in order to compare them to published state employment numbers. We regret any confusion this causes with numbers reported by the KBA based on its fiscal year reporting.



## Operational Assessment

The KBA is a unique model and has achieved some notable success in its first four years of operation. GSP Consulting did not find any operational flaws that would significantly inhibit the performance of the program, but an evaluation is critical by nature and this section focuses on areas that can be improved. We address primarily those issues that reflect the current board, except where legacy issues may affect ongoing perceptions. Several interviews expressed concerns with the board operations. Some of these concerns reflect the differences that have been cited between the two phases of KBA leadership. The positive aspects are identified in the table below but the discussion emphasizes the areas of concern, rather than the positive aspects, so that the board and staff can address them.

**Table 13: Comments from KBA Stakeholders**

	<b>Commendations</b>	<b>Concerns</b>
<b>Startup Phase</b>	<ul style="list-style-type: none"> <li>• Flexible response to opportunities</li> <li>• Entrepreneurial approach</li> <li>• High impact deals</li> </ul>	<ul style="list-style-type: none"> <li>• Ambiguous criteria for funding</li> <li>• Allegations of improper deals</li> </ul>
<b>Operations Phase</b>	<ul style="list-style-type: none"> <li>• More transparent decision-making</li> <li>• More outreach throughout Kansas</li> <li>• More comprehensively addressing the range of need</li> </ul>	<ul style="list-style-type: none"> <li>• Inconsistent advice</li> <li>• Slow decision making</li> <li>• Lack of communication</li> <li>• Recusal process on potential conflicts of interest</li> </ul>
<b>The Balance</b>	<ul style="list-style-type: none"> <li>• There is no state investing this kind of public money without some level of checks and balances. The lack of checks and balances that characterized the entrepreneurial style of the startup phase created greater opportunities for misconduct because the typical restraints of the private sector don't apply when you're not risking your own money. The KBA's funds are tax dollars that are held in reserve for a public purpose. The KBA needs to maintain reasonable processes to review investments in order to protect the public interest and maintain public trust. Specific recommendations are provided in the individual program reviews and the review and approval section on page 59.</li> </ul>	

For the most part, the current board has established processes and criteria for how projects will be funded, but as these processes are still recent, there have been issues of clients receiving inconsistent advice or having to revise proposals in mid-stream. Clients and partners have also expressed difficulty with a lack of responsiveness on the part of the KBA. In some cases, slow

responses were simply an artifact of the lack of staff. In other cases, clients or partners raised issues that required policy guidance or legal advice. **As the organization evolves and the staff becomes better versed in its scope of authority and there are more precedents for the board and staff to guide them, these incidences should become less frequent. In fact the interviews almost universally commended the current staff.** There was however no agreement whether the KBA should add more staff as the volume of activity grows. According to our benchmarks, the KBA does not have more staff than similar programs, although the current staffing level is increasing with two new staff members beginning in October 2008. **Therefore, we find no justification for criticism that the KBA has a staff that is too large.**

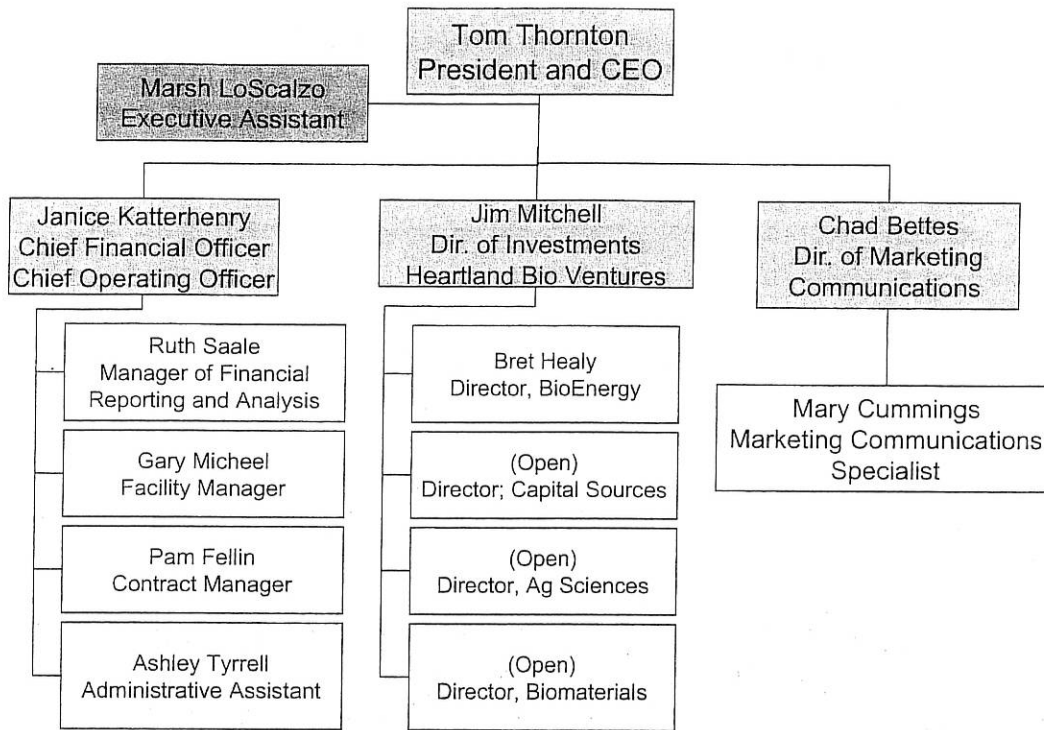
**Table 14: Staff Comparisons between the KBA and Peer Organizations**

	<b>Staff</b>	<b>Annual Budget</b>	<b>Staff per \$1M</b>
Idea Foundry	4	\$2,000,000	2.00
NC Biotech	20	\$14,500,000	1.38
OCAST	27	\$42,000,000	0.64
<b>KBA Jul-07 to Jun-08</b>	<b>10.78</b>	<b>\$29,009,124</b>	<b>0.37</b>
<b>KBA Oct-06 to Jun-07</b>	<b>4.97</b>	<b>\$17,889,000</b>	<b>0.28</b>
GRA	8	\$30,000,000	0.27
SC Centers of Economic Excellence	5	\$21,000,000	0.24
21Fund	5	\$21,000,000	0.24
<b>KBA to Sep-06</b>	<b>0</b>	<b>\$6,984,779</b>	<b>-</b>

Source: Review of websites, annual reports, audits and IRS 990s. In October 2008, the KBA added two staff members not reflected in the table above.

The KBA has also improved the competitive position of Kansas because it has programs to address a wide variety of needs within the biosciences. Many states provide resources only for facilities or matching funds and do not address the range and scale of needs. There is a danger that the KBA is too broad given its current staffing. Most of the programs that operate with 5-7 staff members have a limited focus OR a very small budget. The KBA has a very broad mandate and must steward a substantial amount of investment, so it is reasonable to assume that it will have staff in proportion to its activities.

Figure 5: KBA Organizational Chart



Source: KBA FY 2009 Annual Operating Plan. Two staff members were added in October 2008 for handling investment opportunities.

A different organizational issue is that the best organizations have a majority of staff and board members with backgrounds that reflect the issues being addressed. An organization promoting the growth of the biosciences should have a significant share of board members with a background in the biosciences and particularly with entrepreneurial bioscience firms. The current board has only one member with experience creating and running a bioscience firm. There is significant expertise university researchers in fields related to bioscience as well as individuals with the private sector experience but they are generally not working in the commercialization of bioscience technology. Each of the individual board members has qualifications that provide a valuable contribution to the KBA, but as a whole, the board does not include enough members that reflect the experience of the bioscience entrepreneurs they are intended to serve. The appointing authorities should include direct bioscience entrepreneurial experience (founding or managing a bioscience firm) as one of the criteria for new appointments to the board in order to have 25 to 50 percent of the board with such experience.

**Table 15: KBA Board of Directors**

	<b>Sector / Experience</b>	<b>Residence</b>
Sandra A. J. Lawrence (Chair)	Hospital administration	KS
Bill Sanford (Vice Chair)	Entrepreneur and investor, Medical equipment and supplies	FL
Ed McKechnie (Secretary/Treasurer)	Former Legislator, Railroad executive	KS
John W. Carlin	Former Governor and Archivist, current university professor.	KS
David Franz, D.V.M., Ph.D.	Biological warfare and security, government and university	KS
Dan Glickman	Former Secretary of Agriculture, Lobbyist	DC
Angela Kreps	Banking, software and IT sales	KS
Ray Smilor, Ph.D.	Professor of business and entrepreneurship	CA
<b><u>Nonvoting Members (at the time of the evaluation)</u></b>		
Robert Hemenway, Ph.D. <sup>11</sup>	University of Kansas	KS
Jon Wefald, Ph.D. <sup>4</sup>	Kansas State University	KS

The allegations of misconduct that have been reported in the media and repeated in numerous interviews are a more serious area of concern.<sup>12</sup> This evaluation has not attempted to perform an investigation of these allegations, but focuses on whether the procedures and policies of the KBA are sufficient to prevent serious misconduct. The extent to which these allegations have been shared and publicized in the media and other forums requires an even greater level of transparency from the current board and leadership in order to eliminate any negative public perceptions. The board has a thorough disclosure policy, but we did not find that the recusal policy was universally understood by all board members or by the community, whether the recusal encompasses discussion as well as voting and whether or when a board member with a potential conflict of interest should leave the room. The board must also maintain careful use of Executive Session as a few interviews questioned the frequency of these sessions and how recusals are handled in Executive Session. According to the KBA, the board attorneys are consistently present at board meetings to ensure that the meetings are in line with the sunshine laws in Kansas.

<sup>11</sup> The Kansas Board of Regents voted to remove Dr. Hemenway and Dr. Wefald from the board of the KBA on September 18, 2008. See *Journal-World*, Lawrence, Removing university leaders hurts state bioscience group, Sep. 27, 2008. <http://ivr.tmcnet.com/news/2008/09/27/3673311.htm>.

<sup>12</sup> See *Kansas City Business Journal*, The Pulse: How will Clay Blair's resignation affect the Kansas Bioscience Authority? Friday, June 29, 2007; see also Dolph Simons, Jr. Political interests have shattered Bioscience Authority Dream. *Journal-World*, Lawrence, June 16, 2007.

### ***KBA Clarification of Board Disclosure and Recusal Policies***

A recuse and excuse policy is and has been in place for board activity. This is addressed under K.S.A. 74-99b08 which does not allow a director to "participate" on behalf of the authority. The KBA and its Directors follow a two-step process as it relates to the recusal of any member from voting.

First, the KBA board members are subject to the statutory requirement of filing statements of substantial interest. (K.S.A. 74-99b08) Once having declared the substantial interest under the law, the director is not allowed to participate on behalf of the KBA in the authorization of any such contract or transaction with respect to the substantial interest. The KBA and its directors follow this law.

Second, in addition to the statutory mandate, the KBA directors have adopted and adhere to a conflicts of interest policy. Under this policy, directors disclose to the entire board in writing when they have an actual or potential conflict of interest. Additionally, the board itself could raise the issue of an actual or potential conflict, even if a director has not raised it. Pursuant to law and the conflicts policy, directors must only recuse themselves when they have an actual direct or indirect conflict.

A state the size of Kansas, within a field as narrow as bioscience, does make it hard to maintain a balance between qualified board members who have no potential conflict with any KBA project. One example cited in numerous interviews is the funding that the KBA has provided to KansasBio. Critics view this as an example of a conflict of interest, but another viewpoint is that the KBA is leveraging the existing assets in the state to further its mission. The KBA would also be criticized if it duplicated the activities of KansasBio in order to avoid a potential conflict with a member of the board. The KBA already has several board members from outside the state which helps to provide some objectivity but it would not be realistic to have more out-of-state residents on the board because of the time and costs involved with travel to board meeting. **The KBA then must do an exemplary job of managing even the perception of a conflict of interest.** In order to put any concerns or perceptions to rest, the KBA must be even more transparent in the operations of its board. Board members that have any financial interest in a project or an employment relationship within their immediate family should recuse and physically excuse themselves from the **discussion and the authorization** of that project.

As an example, at the annual meeting, attended by the consultants, Angela Kreps disclosed that several of the funding proposals that were being voted on were funding recipients who are members of KansasBio (the organization of which Ms. Kreps is President.) This is not a conflict of interest under the Act or the Policy, so her recusal from voting was not required. Similarly, Bill Sanford indicated that a consultant for one of the funding recipients was someone with

whom he has some investments. This is not a conflict of interest under the Act of Policy, so his recusal from voting was not required. In neither case did the individual director stand to personally benefit if the funding was provided, so in neither case was there a conflict that required recusal according to legal or policy guidelines.



## Funding Mechanism Assessment

Any assessment of how an organization operates and does business will always reflect specific conditions at that point in time, which will be heavily influenced by prior decisions. Where the organization goes in the future will be influenced but not determined by this legacy. The KBA remains very early in its evolution.

Due to the evolving nature of the KBA programs there was widespread lack of understanding of the requirements and criteria to receive funding support from the KBA. This situation seems to be recognized by the staff and some additional information and materials have been developed to explain the requirements. The KBA has been visiting communities throughout the state to explain the programs and requirements. Most of the partner organizations had a general familiarity with the KBA programs but did not express confidence in being able to advise companies on whether they would be an appropriate candidate for KBA funding. The KBA completed a Program Guide and distributed to more than 5,000 copies but many partners were not familiar with the publication at the time of our interviews.

Partners typically refer the client to the KBA website or call the KBA directly. The website contains all of the program requirements and applications, but a client would have to click through every program to determine which might be appropriate. In order to promote greater understanding of the KBA's programs and guidelines, the KBA needs to spend time in one-on-one meetings with partners to fully explain the guidelines, discuss the criteria for eligibility and answer questions. Even a small increase in the partner's understanding of the KBA program will ultimately save a great deal of staff time, and more importantly, save time for businesses and clients who might vainly pursue support they will never get. Furthermore, when the KBA presents the programs and guidelines to groups of potential clients, it should include time for questions and answers from the attendees. Several interviews noted that the KBA held meetings to present its programs, but there was limited time for participant questions or one-on-one explanations.

No one expects that the partners or clients would have the in-depth knowledge of staff, but the feedback provided for this evaluation indicates that most partners and many clients are sincerely confused about the guidelines, eligibility criteria and application requirements. The KBA has increased its outreach efforts and has held more meetings with partners and conducted more regional workshops and meetings. This effort should continue and the KBA should monitor whether it needs to include more time for Q&A by including specific questions on a feedback form distributed to participants.

The legislation that created the Kansas Bioscience Authority dictated the creation of a set of programs as well as allowed for some interpretation or creativity to serve future defined bioscience related needs. The KBA currently operates or is developing the following programs which are reviewed in the following section:

- Kansas Bioscience Eminent Scholars
- Kansas Bioscience Rising Stars
- Kansas Bioscience R&D Voucher
- Kansas Bioscience Matching Fund
- Kansas Bioscience Expansion & Attraction
- Bioscience Tax Investment Incentive
- Collaborative Biosecurity Research Initiative
- Collaborative Cancer Research Initiative
- Kansas Bioscience Centers of Innovation
- Heartland BioVentures

## Kansas Bioscience Eminent Scholars and Rising Stars

These programs are designed to recruit distinguished bioscience researchers to Kansas research institutions. The KBA approved its first three Eminent Scholars in the first four months of 2008. No awards have been made for Rising Stars at this time. At this time, the KBA can claim only limited success as a result of its direct efforts to attract researchers at this time. Furthermore, these scholars have not been in place long enough to have brought in significant research dollars at this time. As points of comparison, the South Carolina Centers of Economic Excellence (SCCOEE) was created in 2002 and awarded its first project in June 2003. In the first four years 29 Centers were awarded \$85.5M; 10 spin-off companies launched; 7 endowed chairs recruited; and \$41.3M in R&D funding was attracted. Utah's USTAR program was created in March 2006 and in three years attracted 15 new faculty members (12 in biotechnology) with awards of \$19.5M. Other faculty recruitment efforts have even more impressive track records, but South Carolina and Utah are closest to the KBA in terms of when they started.

The KBA is providing awards that are competitive with the benchmark states; however Ohio will fund packages up to \$50 million, which could significantly raise the stakes in the talent attraction arena. None of the other benchmark programs have the kinds of reliable, dedicated funding that the KBA enjoys. Ohio also allows its funds to be used to retain faculty - a feature that may become increasingly important as states and institutions bid for each other's talent.

**Table 16: Eminent Scholar and Rising Star Results**

Program	Eminent Scholars	Rising Stars
Count of Project	3	-
Sum of Funds Committed	\$ 7,966,954	-
Sum of Funds Paid	\$ 1,794,891	-
Sum of Realized Jobs	0	-
Jobs per \$100k Paid to Committed	-	-
	23%	-

Note: Funds paid and committed as of June 30, 2008.

Table 17: Benchmarking Researcher Recruitment

	Pro	Con
Georgia Research Alliance – Eminent Scholars (Staff of 8)	<ul style="list-style-type: none"> <li>• \$135M for 58 Eminent Scholars from 1991–2006, provides an average of \$2.3M.</li> <li>• Total GRA investments of \$525M to support research and commercialization.</li> <li>• More than 150 new companies.</li> <li>• Foster cross–university research.</li> <li>• Flexible response to different opportunities.</li> <li>• Industry and Academic Trustees with Board chair from the private sector.</li> </ul>	<ul style="list-style-type: none"> <li>• No dedicated funding; Funding from private foundations and industry grants as well as the Governor’s budget with approval from the Georgia Legislature.</li> <li>• GRA does not fund companies.</li> </ul>
Utah USTARS (Staff of 6)	<ul style="list-style-type: none"> <li>• Faculty committee identifies and recruits scholars.</li> <li>• Chaired by a biotech venture capitalist, mostly private sector board with one state official (Treasurer) and one university representative</li> </ul>	<ul style="list-style-type: none"> <li>• Average funding of only \$1.3M.</li> <li>• Universities identify the focus areas.</li> <li>• No dedicated funding; Funded by state appropriations.</li> </ul>
North Carolina Oliver Smithies Faculty Recruitment Grant (Staff of 20 at NCBiotech)	<ul style="list-style-type: none"> <li>• Rolling applications.</li> <li>• Simple review and approval process.</li> </ul>	<ul style="list-style-type: none"> <li>• Average of less than \$200,000; maximum is \$250,000.</li> <li>• Does not fund recruits who have already accepted.</li> </ul>
Ohio Research Scholars Program	<ul style="list-style-type: none"> <li>• Funds can also be used to retain faculty.</li> <li>• Awards range from \$2.5M to \$50M.</li> <li>• Competitive award process.</li> </ul>	<ul style="list-style-type: none"> <li>• Funding from existing budgets: Joint funding from Department of Development and Board of Regents.</li> </ul>

## Kansas Bioscience Matching Fund

This matching program is intended to leverage federal technology development grants, such as SBIR and STTR to Kansas-based bioscience companies. The KBA has made four awards through its federal matching program and paid out nearly 20 percent of the committed funds. The first awards for this program were made in November 2007. Most of the funded projects have not completed their federal SBIR/STTR projects at this time, so the expected job creation has not been realized.

**Table 18: Federal Matching Program Results**

<b>Program</b>	<b>Federal Match</b>
Count of Project	4
Sum of Funds Committed	\$ 840,000
Sum of Funds Paid	\$ 160,000
Sum of Realized Jobs	0
Jobs per \$100k	-
Paid to Committed	19%

Note: Funds paid and committed as of June 30, 2008.

The KBA has evolved significantly, before, during and after the evaluation was conducted. For example, when the Matching Fund program was evaluated in August, the applicants for this program had to complete their application four weeks before the SBIR/STTR application deadline. Since our initial review, the KBA has aligned its application deadline with the programs in other states. The current policy is that: "Applications under this program must be received no later than 30 days after submission of an application for funding. Provision of matching funds is contingent on final approval of the KBA's Board and notice of award from the applicable funding source."<sup>13</sup> The current policy better aligns the matching fund program with comparable programs in other states. It should also increase the ability of Kansas researchers and entrepreneurs to apply for matching support.

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<sup>13</sup> Kansas Bioscience Authority website. Accessed on November 12, 2008.  
[http://www.kansasbioauthority.org/how\\_we\\_can\\_help/Matching.aspx](http://www.kansasbioauthority.org/how_we_can_help/Matching.aspx).



Table 19: Benchmarking Federal Matching Programs

	Pro	Con
<p><b>Indiana's 21<sup>st</sup> Century Research and Technology Fund (21 Fund)</b> (Staff of 5 for 21Fund, IEDC staff 80+)</p> <p>Created in 1999, but management shifted to IEDC in 2005:</p>	<ul style="list-style-type: none"> <li>• Funded 99 Phase I's for \$9.2M from 2005-2007.</li> <li>• Publish detailed information about the awards, distribution of awards, and all of the applicants.</li> <li>• Phase I matching application is the SBIR proposal plus a two-page work plan.</li> <li>• Application submitted within 90 days of Phase 1 Award.</li> </ul>	<ul style="list-style-type: none"> <li>• Not technology specific</li> </ul>
<p><b>Kentucky SBIR/STTR Matching Program</b></p>	<ul style="list-style-type: none"> <li>• Matching fund application is due after the SBIR award.</li> <li>• Online eligibility check.</li> </ul>	<ul style="list-style-type: none"> <li>• Requires several certifications from CPAs and state agencies.</li> </ul>
<p><b>Illinois Innovation Challenge Program</b></p>	<ul style="list-style-type: none"> <li>• Provide 30 hours of assistance in preparing and reviewing proposals.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide only grant writing and technical assistance.</li> <li>• Matching grants suspended due to funding cuts.</li> </ul>
<p><b>One North Carolina Small Business Program</b></p>	<ul style="list-style-type: none"> <li>• Reimburse part of the SBIR/STTR proposal costs up to \$3,000.</li> <li>• Phase I match up to \$75,000</li> <li>• Applications due 45 days after the SBIR award.</li> <li>• Provide 75 percent of the match award with proof of an approved Phase I project. Final 25 percent when federal agency accepts Phase 1 report.</li> </ul>	<ul style="list-style-type: none"> <li>• Five stage review process</li> </ul>



## Kansas Bioscience R&D Voucher

The R&D Voucher Program provides funding to Kansas bioscience companies to partner with a Kansas research institution to conduct early-stage applied research and development activities intended to commercialize bioscience technologies. The first R&D Voucher was approved in April 2006 so this program has one of the longer track records for the KBA. Seven R&D Vouchers have been approved to date for nearly \$1.2 million in total commitments, of which 64 percent has been disbursed. This program has created 2.2 jobs per \$100,000 in paid funds. These projects are generally two years in duration so the original projects are nearing completion.

**Table 20: R&D Voucher and Center of Innovation Results**

Program	R&D Voucher
Count of Project	7
Sum of Funds Committed	\$ 1,196,200
Sum of Funds Paid	\$ 768,473
Sum of Realized Jobs	17
Jobs per \$100k	2.2
Paid to Committed	64%

Note: Funds paid and committed as of June 30, 2008.

Many of the benchmark programs use competitive award processes because they lack the resources of the KBA and have to make harder decisions about who to fund. All of these programs create a tradeoff between flexibility and funding. Usually the programs that provide more funding are less flexible, but some unite the worst of both worlds. Generally the KBA offers a better balance of flexibility and significant funding. These projects should not require a lengthy review, nor do they require significant staff resources and there are many positive impacts from these projects, so the KBA can and should be able to greatly increase the level of activity. Comparable programs have funded at least twice as many industry-university commercialization projects within their first four years.

Ongoing efforts to develop and commercialize new products and services, such as those supported by the R&D Voucher program should be enhanced and increased in volume. Since these projects are risky, volume is needed to produce results. However, these projects should not require significant staff effort for due diligence or mentoring when there is a university partner because the funding is limited to \$100,000–\$500,000; matching funds are required so the financial commitment of the partners and the approval process of the university also

provide validation of the project. Furthermore, one of the goals of these kinds of programs is to promote more cooperation between the private sector and universities, so these projects achieve some success even if the resulting technology is not viable. In fact, the KBA should expect that a portion of these projects will fail, but that the partners will learn from that failure and do better next time. That is part of the reason why volume is needed and why so many of these programs in other states limit the amount of these awards to the same range provided by the KBA (\$100,000 to \$500,000). The KBA needs to balance its due diligence with a reasonable level of risk-taking so that the KBA's due diligence, review standards and staff capacity is not a barrier to the development of industry-university partnerships in the State of Kansas.

Based on our benchmarking of programs similar to the R&D Voucher program, the KBA should be able to support 20-30 projects annually with two full-time staff supported by external reviewers and support staff. This staffing level does not include staff or volunteers that may be involved in mentoring and developing bioscience firms. With an estimated 440 to 980 non-hospital bioscience firms, as well as hundreds of bioscience researchers at the universities, as well as an unknown number of bioscience entrepreneurs. If we then assume that there are only 1,000 to 1,500 eligible candidates (companies, researchers and entrepreneurs) then the KBA should have a pool large enough to find 20 worthy R&D Voucher projects each year for the next five years, and still have only funded ten percent of the potential in Kansas, assuming no additional demand is created. This evaluation recommends a more streamlined approval process that could boost the number of R&D Voucher awards.

Approval should be competitive based on the reviews by external experts and staff approval, and the understanding that the universities and their partners are also assuming some risk and the universities in particular have internal processes for approving research activity that provides some validation of its scientific merit. Projects that have no university partner may have to be treated differently. The board should authorize staff to award up to \$2 million per quarter in this program for projects that have a university partner without prior board approval. The increased level of activity and experience should generate better proposals and projects in the long run and it will provide a greater incentive for university researchers to seek out industry partners and vice versa.

Table 21: Benchmarking R&D Voucher Programs

	Pro	Con
Kentucky R&D Voucher Program (Staff of 31)	<ul style="list-style-type: none"> <li>• Competitively awarded</li> <li>• Repayment is required but not IP-based (simplifies for KSTC).</li> <li>• Repayment through a convertible note (1.2 x the funds disbursed) or a negotiated discount.</li> </ul>	<ul style="list-style-type: none"> <li>• Maximum funding of \$200,000 over two years.</li> <li>• Projects must be completed in two years.</li> <li>• Very detailed application for a small amount of money.</li> <li>• Requires contract with a Kentucky college or university.</li> </ul>
Oklahoma Applied Research Support (OARS) (Staff of 27)	<ul style="list-style-type: none"> <li>• Different funding levels and project durations, up to \$300,000 per year.</li> <li>• Proof-of-concept proposals are primarily evaluated for technical merit.</li> <li>• Accelerated proposals are evaluated evenly on technical merit and economic impact.</li> </ul>	<ul style="list-style-type: none"> <li>• Very detailed application, especially for the smaller award.</li> <li>• Patterned on university or federal models with IRB, Human Subject and IACUC approvals.</li> </ul>

## Centers of Innovation

The Kansas Bioscience Center of Innovation program (Centers of Innovation) is a cornerstone of the KBA's research capacity investment strategy. This program is intended to both build world-class bioscience research centers and "...to assist existing and emerging bioscience industries in capturing new knowledge and research findings for their product and production functions."<sup>14</sup> The goal of the program is to focus on core technology areas to build national and international research excellence. These Centers are intended to be consortia that will leverage university, private companies and federal resources.

**Table 22: R&D Voucher and Center of Innovation Results**

Program	Centers of Innovation
Count of Project	4
Sum of Funds Committed	\$ 1,000,000
Sum of Funds Paid	\$ 320,001
Sum of Realized Jobs	0
Jobs per \$100k	-
Paid to Committed	32%

Note: Funds paid and committed as of June 30, 2008.

The KBA has funded four Centers to date for a total commitment of \$1 million with 32 percent of the funds paid out. The funding commitments were reported in several KBA Pipeline reports, Outcomes Reports, financial reports provided to the Board of Directors on April 8, 2008 and included in the KBA's response to the Legislation Division of Post Audit's review of economic development activities (See Figure 6 and Figure 7). In response to a draft of this report, the KBA reported that it has: "...funded 3 planning grants to complete a business plan for Centers of Innovation for a total commitment of \$580,000; funds paid is \$320,001, and paid to committed is 55 percent."

<sup>14</sup> Kansas Bioscience Centers of Innovation. Accessed from [http://www.kansasbioauthority.org/how\\_we\\_can\\_help/Innovation.aspx](http://www.kansasbioauthority.org/how_we_can_help/Innovation.aspx) on 11/13/2008.

Figure 6: Scanned Image of KBA Response to Part II of the Legislative Post Audit

Centers of Innovation 74-99b09		
Kansas Bioscience Center of Innovation - KCBID	05/25/2007	200,000
Kansas Bioscience Center of Innovation - KBICDD	05/25/2007	180,000
Kansas Bioscience Centers of Innovation - Plant Design	05/25/2007	200,000
Kansas Bioscience Centers of Innovation - Other	05/25/2007	420,000
<b>Total Centers of Innovation</b>		<b>1,000,000</b>

Figure 7: Scanned Image of KBA Pipeline Report, Aug. 27, 2008

	Application Date	Board Approval Date	KBA Funding	
Nowa Technology				
JACAM	3/13/2006	4/11/2006	\$500,000	
Sunflower Bioenergy Phase 1	6/16/2006	7/13/2006	\$13,000	
Sunflower Bioenergy Phase 2	2/20/2007	1/9/2007	\$500,000	Typo or Board approval preceded application
KBCI - Other	10/13/2007	5/25/2007	\$420,000	
KBCI - KCBID	10/13/2007	5/25/2007	\$200,000	
KBCI Plant Design	10/13/2007	5/25/2007	\$200,000	
KBCI - KBICDD	10/13/2007	5/25/2007	\$180,000	

This is a minor discrepancy, but it illustrates the difficulty of determining when the KBA's official reports on its investments are accurate. Furthermore, Figure 7 indicates that the board approved the project on May 25, 2007, but the application date is identified as October 13, 2007, nearly five months after the board approval. A review of the Pipeline report indicates that no application date was identified for a dozen projects<sup>15</sup> and five projects listed board approval

<sup>15</sup> The Pipeline Reports also identify clients who have not yet applied so these projects were not included in the county. GSP also excluded certain special initiatives such as the NBAF, Heartland BioVentures and the Kansas Bioscience Fund which also had no specific application date.

dates that preceded the application dates (See Figure 7). These may be mere typos, but they have appeared consistently on every Pipeline Report dating to May 21, 2008, which was submitted in response to the LPA audit.

The KBA has funded only three planning grants and has possibly committed \$420,000 for another planning grant. Since 2002, the South Carolina program has established 29 Centers with a total of \$85.5 million. To put this in perspective, South Carolina has established four centers per year, invested an average of \$12 million per year, with each Center funded at an average of nearly \$3 million. In one year, Science Foundation Arizona invested \$15.1M in 12 partnerships, which leveraged \$27M in outside capital. The KBA's performance in this program does not compare to Arizona or South Carolina.

**Table 23: Benchmarking Center of Excellence Programs**

	Pro	Con
<b>Science Foundation Arizona Strategic Research Groups (Staff of 14)</b>	<ul style="list-style-type: none"> <li>• Focus on industry–research partnerships.</li> <li>• Invest up to \$10M in each partnership, including up to \$2M for recruiting a director.</li> <li>• Require mix of large and small industry partners.</li> <li>• In the first year, Science Foundation Arizona invested \$15.1M in 12 partnerships, which leveraged \$27M in outside capital. \$20M in investment monies is still currently pending approval with outside organizations.</li> </ul>	<ul style="list-style-type: none"> <li>• Proposals are led by Research Performing Institutions with a lead industry partner.</li> <li>• Funding is distributed among many partners over several years could diffuse focus.</li> </ul>
<b>South Carolina Centers of Economic Excellence (staff of 5)</b>	<ul style="list-style-type: none"> <li>• Endowment fund of \$200 million from a dedicated source – the South Carolina Education Lottery Account.</li> <li>• Require 1:1 match from non–state sources</li> <li>• Provide \$2–5M per center.</li> <li>• Review process balances in–state and out–of–state experts.</li> <li>• Include an on–site review.</li> <li>• In the first four years 29 Centers were awarded \$85.5M.</li> </ul>	<ul style="list-style-type: none"> <li>• No dedicated funding; Funded annually by appropriations.</li> <li>• Review board is politically appointed by Governor and Legislature with Presidents of the three research universities as ex–officio.</li> </ul>

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## Kansas Bioscience Expansion and Attraction

The KBA works closely with partners on the attraction, expansion and retention of bioscience opportunities for Kansas. The primary partner is the Kansas Department of Commerce, but the KBA has also worked closely with KTEC and regional economic development organizations on these projects. The KBA may offer qualifying companies direct financial assistance in the form of low-interest loans, grants, bonds, tax incentives, job training grants, or any combination of the above.

**Table 24: Expansion and Attraction Results**

Program	Attract/Expand
Count of Project	13
Sum of Funds Committed	\$ 16,977,388
Sum of Funds Paid	\$ 8,813,770
Sum of Realized Jobs	879
Jobs per \$100k	10.0
Paid to Committed	52%

Note: Funds paid and committed as of June 30, 2008.

The numbers in Table 24 include the Ventria equity deal as an Expansion and Attraction program, but it may also be considered an equity investment in a bioscience company and in some reports the KBA has classified it as an equity deal. However, the KBA also classified the deal as an Expansion and Attraction project on its website (see the call out box on the next page). Based on the description provided on the KBA's website, GSP Consulting has classified the convertible note to Ventria as Expansion and Attraction. A convertible note is an equity instrument, but other aspects of the Ventria project would suggest it belongs with Expansion and Attraction: The funds were an incentive for Ventria to establish a facility in Kansas; Ventria was founded in 1993; Ventria is headquartered in California; Ventria's funding since 2006 has been classified as Expansion and Later Stage Capital, not Seed or Early Stage Capital.

Excerpt from the KBA website: [http://www.kansasbioauthority.org/projects\\_funded/](http://www.kansasbioauthority.org/projects_funded/)

## Expansion and Attraction

### **ANOxA CORP**

The KBA awarded \$300,000 to ANOxA CORP, an animal-health biotechnology company, for the commercialization of a new drug to treat a common equine disorder should it move its headquarters to Kansas. The company is expected to hire seven employees upon relocation (10/28/08).

*Expected or Realized Outcomes:* Seven new employees, relocation to Kansas, and \$6 million in equity financing.

### **MGP Ingredients, Atchison, Kansas**

The KBA awarded \$500,000 for the development and further commercialization of biobased, biodegradable resins to economically replace plastic. The biobased resin can be used for products such as disposable cutlery, DVD cases, and bottle caps — and is biodegradable (7/15/08).

*Expected or Realized Outcomes:* 54 new jobs and \$9.9 million in capital investment.

### **Ventria Bioscience, Junction City, Kansas**

The KBA awarded a \$3.75 million convertible note as part of a \$7.5 million financing plan to expand operations, including an increase in employment and expanded production capacity in Kansas. The financing will help the company prepare for the commercial launch of its pediatric health product, which was clinically shown to shorten the duration of acute childhood diarrhea, the second leading killer of children under the age of 5, claiming 2 million lives annually on a global basis. The company's patented protein expression technology, ExpressTec, is highly efficient and uses rice as a biological factory to produce protein-based products for human health and nutrition (6/5/08).

*Expected or Realized Outcomes:* \$3.75 million in private investment and 19 full-time jobs and seven part-time jobs.

The early focus of the KBA was on the Expansion and Attraction efforts. The KBA has completed 13 of these projects with commitments of nearly \$17 million, more than half of which has been paid out. These projects have accounted for 879 of the KBA's 938 jobs created to date. The KBA is not solely responsible for these projects and other agencies participated in many of these projects, which has raised the question of how much if any credit is due to each of these partners for these impacts.

There are few good methods for resolving how much credit each partner receives for jobs created but one approach is to allocate the number of jobs or amount of capital investment generated to each partner (including the client) based on their share of the total investment. The KBA has paid out \$8.8 million for these projects with realized capital investment of \$67.5 million. Therefore the KBA has contributed 13 percent of the capital investment to date, so the adjusted job number would be 114 ( $879 \times 0.13$ ). However for the KBA to adopt this methodology while other agencies do not would amount to unilateral disarmament.

Florida has made aggressive investment in recruiting bioscience firms, but unlike Kansas, Florida has chosen to invest more than \$500 million in one firm alone, which greatly increases the risk of their investment. In total, Florida invested nearly \$1 billion in only seven companies. The problem with this strategy is that a small number of very large projects make the failure of any one project a major setback. Other states are putting in very small amounts that are less likely to influence a location decision and more likely to subsidize activity that would have occurred with no intervention. **The strategy the KBA is pursuing by staging its investment over ten years is far more prudent and likely to bear results.**

**Table 25: Benchmarking Attraction / Retention / Expansion**

	<b>Pro</b>	<b>Con</b>
<b>Florida Innovation Incentive Fund</b>	<ul style="list-style-type: none"> <li>• Large grants to seed high impact projects: \$1 billion for seven companies.</li> <li>• Size of investments brought national recognition.</li> </ul>	<ul style="list-style-type: none"> <li>• Does not provide mechanisms or funds to extend the benefits and grow the cluster.</li> <li>• Does not build internal or homegrown capacity.</li> <li>• Large investments in a few firms increase the level of risk – all is lost if the firm fails.</li> <li>• Too much cash up-front reduces performance leverage</li> <li>• No funding mechanism to support long-term funding of a strategy – Legislature has zeroed the fund.</li> </ul>
<b>Minnesota Bioscience Business Development Public Infrastructure Grant Program</b>	<ul style="list-style-type: none"> <li>• Projects are publicly owned infrastructure so the benefits are not lost if a firm fails.</li> </ul>	<ul style="list-style-type: none"> <li>• Smaller projects (less than \$5M) and only 3–4 per year reduce the impact.</li> <li>• Source of funds is general obligation bonds – potential drain on general fund.</li> <li>• Amount available varies each year.</li> </ul>

	Pro	Con
Minnesota Investment Fund	<ul style="list-style-type: none"> <li>• Minimum criteria for investment, jobs and wages.</li> <li>• Must be matched 50%.</li> </ul>	<ul style="list-style-type: none"> <li>• Indirect funding mechanism: Grant to local government that provides loan to business.</li> <li>• Does not facilitate a long-term strategy: Maximum of \$500,000 per grant and one grant per fiscal year per recipient.</li> </ul>
One North Carolina Fund	<ul style="list-style-type: none"> <li>• Location or expansion must be in competition with an out-of-state location.</li> <li>• Company must agree to average wage test</li> <li>• Negotiated challenge grant.</li> <li>• Local government must provide match.</li> <li>• Economic impact analysis is required for projects with expected benefits in excess of \$1M.</li> </ul>	<ul style="list-style-type: none"> <li>• Funded by nonrecurring appropriations.</li> <li>• Numerous approval and decision steps - local government, Commerce, Governor, Legislature.</li> <li>• Economic impact analysis is required for projects with expected benefits in excess of \$1M.</li> </ul>
Ohio Asset-Based Company Attraction Program (ABCAP)	<ul style="list-style-type: none"> <li>• Awards up to \$1.5M to develop asset-based sales strategies in targeted sectors.</li> <li>• Funds can be used to identify relevant Ohio assets and for staff to conduct attraction.</li> <li>• Uses assets rather than funds as the incentive.</li> </ul>	<ul style="list-style-type: none"> <li>• Supplements other incentive programs, does not provide its own incentives.</li> </ul>

## Bioscience Tax Investment Incentive

The Bioscience Tax Investment Incentive Program allows direct payments to a bioscience company in the amount of 50 percent of its Kansas net operating loss. The program has an aggregate limit of \$1 million annually for all Tax Investment Incentives. The KBA has approved two of these projects to date for a total commitment of \$451,670 with 58 percent disbursed. The first tax investment incentive was approved in the fall of 2007.

**Table 26: Tax Investment Incentive Results**

Program	Bioscience Tax Investment Incentive
Count of Project	2
Sum of Funds Committed	\$ 451,670
Sum of Funds Paid	\$ 264,048
Sum of Realized Jobs	0
Jobs per \$100k Paid to Committed	58%

Note: Funds paid and committed as of June 30, 2008.

Given the cap on this program and the complications of Net Operating Loss programs, it has not been and will most likely continue to be a rarely utilized program. Most benchmark states have not established such low limits on their NOLs and they tend to allow longer carryover (also known as carryforward) and carryback options.

**Table 27: Benchmarking Tax Incentives**

	Pro	Con
Iowa	<ul style="list-style-type: none"> <li>• Carryback 2 years.</li> <li>• Carryover 20 years.</li> <li>• Nonresidents can only carryback or carryover losses from Iowa sources.</li> </ul>	<ul style="list-style-type: none"> <li>• None identified</li> </ul>
Minnesota	<ul style="list-style-type: none"> <li>• Carryover is 15 years.</li> </ul>	<ul style="list-style-type: none"> <li>• No carryback</li> </ul>
Nebraska	<ul style="list-style-type: none"> <li>• Carryover is 5 years</li> </ul>	<ul style="list-style-type: none"> <li>• No carryback</li> </ul>
Missouri	<ul style="list-style-type: none"> <li>• Carryback or carryover must be consistent (same period) with the federal return</li> </ul>	<ul style="list-style-type: none"> <li>• None identified</li> </ul>

## Equity Investments and Heartland BioVentures

For this evaluation we have considered equity investments and the Heartland BioVentures together because most comparable programs have equity and technical assistance together.

The KBA has completed three equity deals to date. Each of these deals is unique but the general form is a convertible note. Due diligence on these deals has been performed by a mixture of staff and external consultants. The KBA is generally not a lead investor and will invest after the company has some initial angel investment, which provides an additional layer of external validation for their investments. A few clients and aspiring clients noted however that because the KBA has significant resources at its disposal, many investors are looking to the KBA to provide that validation. Entrepreneurs are caught in a "chicken-and-egg" dilemma where they need angels to secure KBA equity, but they need KBA endorsement to get angel funding.

**Table 28: Equity Results**

Program	Equity
Count of Project	3
Sum of Funds Committed	\$ 1,220,000
Sum of Funds Paid	\$ 800,000
Sum of Realized Jobs	4
Jobs per \$100k	0.5
Paid to Committed	66%

Note: Funds paid and committed as of June 30, 2008. As noted earlier, the Ventria equity award was counted as an Expansion and Attraction project.

The Heartland BioVentures (HBV) program is still in development at this time. This program has been modeled after a program in Cleveland called BioEnterprise. As of August of 2008 the KBA has received approval from their Board to proceed with implementation of an operational plan. The KBA is currently recruiting advisory board members to assist with this program. Like BioEnterprise, HBV will provide services to prepare firms to access investment capital. At this time, the KBA could be a potential investor in an HBV client but there is no requirement for the KBA to investment in HBV clients.



Table 29: Benchmarking Equity / Startup / Entrepreneurship Programs

	Pro	Con
Illinois iBIO PROPEL and Entrepreneurship Center Matching Grants	<ul style="list-style-type: none"> <li>• Initial funding from private firms</li> <li>• Focus on mentoring and coaching from successful life science entrepreneurs</li> <li>• PROPEL Coaching is a 2-5 month engagement.</li> <li>• Match is required so the entrepreneur shares the risk.</li> </ul>	<ul style="list-style-type: none"> <li>• Matching grants are generally \$5,000-\$15,000.</li> <li>• Match must be cash - hard for startups.</li> </ul>
Idea Foundry (Staff of 4)	<ul style="list-style-type: none"> <li>• Focus on mentoring backed by seed capital.</li> <li>• Goal is to grow the entrepreneur, not just the company.</li> <li>• Work intensively with the entrepreneurs.</li> <li>• Flexibility to address market, product, manufacturing, management and financial issues.</li> </ul>	<ul style="list-style-type: none"> <li>• Limited number of clients each year.</li> <li>• Small seed fund limits the capacity for impact.</li> </ul>
Pittsburgh Life Science Greenhouse EIR program (Staff of 16)	<ul style="list-style-type: none"> <li>• Small, experienced, C-level staff of six has mentored 200 companies since 2002.</li> <li>• Staff serves as Executives-in-Residence on the management team.</li> <li>• Fills the gap in executive talent and increases ability to raise capital</li> <li>• Backed by investment fund that has provided \$11.5M to 50 companies (26 companies in the first four years).</li> <li>• Matched by comprehensive services: incubator, training, facilities, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Started in 2002, first investments not made until 2003Q2.</li> <li>• Average investment less than \$150,000 for the first four years.</li> </ul>
Colorado Fitzsimons BioBusiness Partners	<ul style="list-style-type: none"> <li>• Link the clients to financial and market networks.</li> <li>• Advisors and entrepreneurs self-select.</li> </ul>	<ul style="list-style-type: none"> <li>• Focused on the Fitzsimons Life Science District.</li> <li>• Excludes companies with existing professional investors (a few founders and angels are allowed).</li> </ul>

## Infrastructure

The KBA has supported five infrastructure projects to date for a total commitment of \$10.85 million of which only four percent of the funds have been disbursed. This program has supported the development of incubators, laboratories and the Bioscience Park.

A number of states have set aside significant amounts of money to support bioscience related facilities and infrastructure. Arizona has set aside \$440 million and Missouri is providing \$335 million. The advantage that Kansas has is that the KBA can adjust its allocations between facilities and commercialization support without going back through the Legislature.

**Table 30: Infrastructure Results**

Program	Infrastructure
Count of Project	5
Sum of Funds Committed	\$ 10,850,000
Sum of Funds Paid	\$ 418,219
Sum of Realized Jobs	12
Jobs per \$100k	2.9
Paid to Committed	4%

Note: Funds paid and committed as of June 30, 2008.

**Table 31: Benchmarking Infrastructure Programs**

	Pro	Con
Arizona	<ul style="list-style-type: none"> <li>\$440M approved for new research facilities</li> </ul>	<ul style="list-style-type: none"> <li>No dedicated funding: One-time appropriation, no mechanism for ongoing support.</li> </ul>
Iowa	<ul style="list-style-type: none"> <li>Part of a larger investment of \$500M over ten years.</li> </ul>	<ul style="list-style-type: none"> <li>Only \$5M per year for university infrastructure.</li> </ul>
Missouri – Lewis and Clark Discovery Institute – Capital Improvements	<ul style="list-style-type: none"> <li>Provides \$335M for universities.</li> <li>Managed by the Missouri Higher Education Loan Authority – outside of the state budget process</li> </ul>	<ul style="list-style-type: none"> <li>One-time allocation derived from selling the loans of out of state students.</li> </ul>
Minnesota Partnership for Biotechnology and Medical Genomics	<ul style="list-style-type: none"> <li>Partnership of Mayo Clinic, University of Minnesota and state government.</li> </ul>	<ul style="list-style-type: none"> <li>No dedicated funding: Bi-partisan bonding bill provided initial \$21.7M, then Legislature approved another \$15M.</li> </ul>

## Other Investments

The KBA has also supported a number of projects that don't fit into the categories described above, but which reflect the ability and willingness of the KBA to be flexible with its funding.

Table 32: Miscellaneous Results

Program	Miscellaneous
Count of Project	17
Sum of Funds Committed	\$ 15,477,200
Sum of Funds Paid	\$ 2,927,267
Sum of Realized Jobs	26
Jobs per \$100k	0.9
Paid to Committed	19%

Note: Funds paid and committed as of June 30, 2008.

The Collaborative Biosecurity Research Initiative is one of the larger commitments in this category that will support inter-institutional research that leverages the biosecurity facilities and resources at Kansas State University. The research should be focused on the development of animal disease countermeasures; improving capabilities to detect and evaluate threats from animal and zoonotic diseases; licensing vaccine countermeasures; or strengthening biosecurity resources that serve specific regions or populations. This \$2.5 million initiative is separate from but supports the effort to attract the National Bio-Agriculture Facility (NBAF) facility.

Additional investments have been made to advance Kansas' NBAF proposal and this has consumed a significant amount of Staff and Board time. The majority of individuals that were familiar with the effort to attract the NBAF supported the investment of time on that project<sup>16</sup>. Opinions ranged from a recognition that Kansas is competing for a project on a much larger stage than any previously pursued to the opinion that the cooperative structure built around the NBAF proposal will serve the state well as it pursues other opportunities - even if the NBAF award goes to another location.

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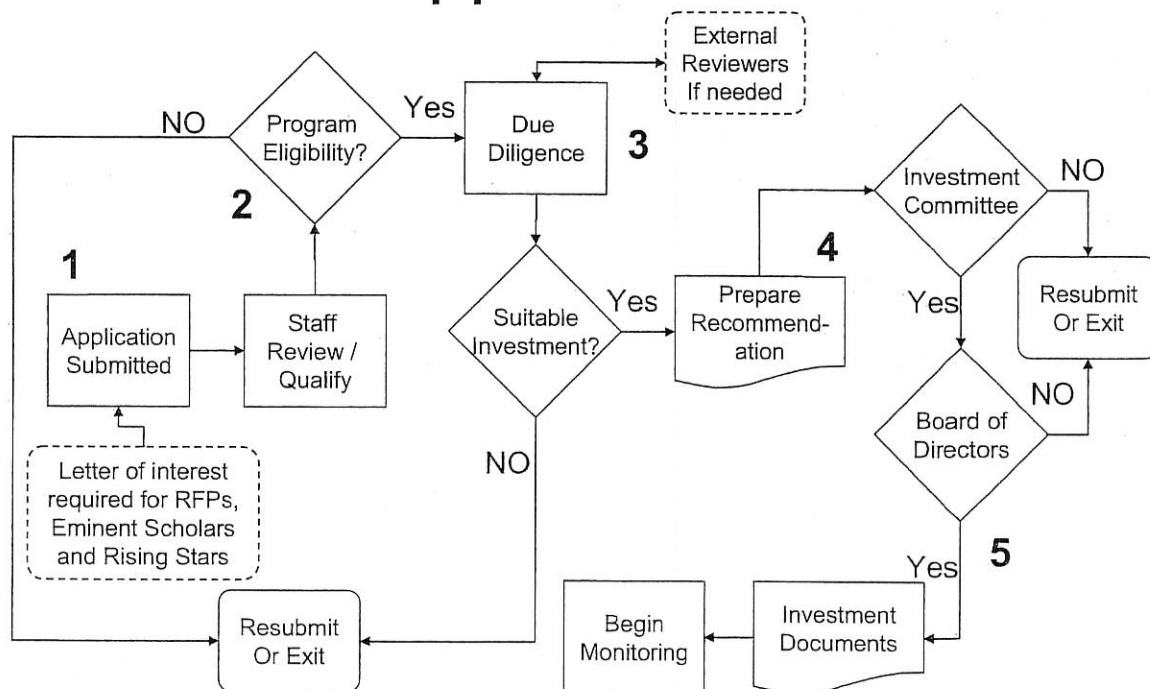
<sup>16</sup> Nine supported the effort while only two opposed it.

## Review and Approval Process

We have interviewed all but one of the senior staff, including but not limited to the President, the CFO and the Director of Investments, and have a working knowledge of the process. Seven of the interviewees to date have applied or received funds from the KBA. These individuals represent a total of 26 projects with the KBA at various times as noted in Figure 1. As noted before, the clients have expressed some frustration with mid-stream changes in the application process. The KBA's review and approval process is in line with the benchmark comparisons. Some programs claim a five-step review process, while others have additional and separate levels of technical and business review. The KBA essentially conforms to a five-step process: 1) application, 2) eligibility, 3) due diligence, 4) recommendation, and 5) approval. Most programs do not count the contracting and monitoring as steps in the approval process, although they are displayed in Figure 8.

Figure 8

## KBA Approval Process



Source: Flowchart developed by GSP based on KBA documentation and interviews.

Overall, the KBA's process provides a reasonable level of checks and balances for appropriate due diligence. However, how well each of these tasks are executed will impact how effectively clients can navigate the process. If the staff or external reviewers do not provide sufficient

information to the Investment Committee, then clients will get stuck in a feedback loop. Furthermore, Board members need to receive information with enough time for a thorough review before the review meetings. Clients are invited to attend Investment Committee and Board meetings to answer questions that arise during the Board's consideration of projects and this should improve the speed and efficiency of the process, as well as the quality of information to support the decisions.

## **Reporting and Post-funding Requirements**

The clients interviewed were nearly unanimous that the reporting requirements were reasonable. The only improvement that was suggested was to increase the flexibility of how a client can describe their success because not all projects can follow the same template format. In comparison to programs in other states, the KBA has more rigorous verification requirements for jobs created and investment leveraged. Most programs simply require a letter or number submitted by the client whereas the KBA has specific criteria for when and how much can be counted.

## **Demand and Future Funding Needs**

The KBA seems to be building momentum in terms of the interest and number of applications for funding being received. The growth of the national reputation of Kansas, the spin-off activity for the visibility created by the NBAF process and demonstrated success of early investments will continue to build the KBA portfolio.

Our assessment concluded that the KBA staff is being thorough and conservative as they estimate what current commitments will mean to long-term funding requirements. They are prudently keeping funds in reserve to respond to unexpected opportunities even as they are projecting the additional returns from quarterly payroll taxes from the state.

One area that the KBA will need to consider is their overhead rate. As we noted previously the amount of funding and portfolio building should necessitate a continued increase in staffing. While often the source of stakeholder contention, hiring enough staff will be critical to the ultimate success and prudent monitoring of the KBA investments. At present the KBA's staff ratio is far below industry averages, but climbing rapidly.

One of the most critical issues is whether to maintain the KBA's off-budget funding mechanism and hands-off evaluation process. We will discuss these issues separately.

## **Preserve the Funding Mechanism**

Kansas should most emphatically NOT change the funding mechanism. No other state program has the kind of stable, dedicated, long-term funding that Kansas has devised. Too often, government budgets over-react to short-term financial crises by decreasing, delaying or



discontinuing the funding for programs that provide long-term security and prosperity for the future. Kansas has avoided this with the off-budget diversion of payroll taxes for 15 years. In establishing the KBA, Kansas has also implemented a comprehensive, flexible, and well-balanced strategy. Other states have invested similar amounts, but usually for the purpose of meeting a short-term infrastructure need, or jump-starting a specific technology niche, such as stem cell research or fuel cells that may limit the ability of the state to adapt its strategy. In other cases, states have been so broad that their investments are dispersed across many sectors and they don't get any feedback and multiplier effects from those investments. The goal of the program was to provide the state of Kansas with another major sector comparable to agriculture, aviation or oil. Accomplishing that task will require stable, patient investment that is unlikely to happen with a legislatively appropriated budget.

### **Monitoring and Evaluating Progress**

The process of legislative appropriations however serves a useful function in protecting the public's money. However, Kansas also has a strong tradition of research-based evaluation, through the Legislative Division of Post Audit and Kansas, Inc. These resources provide Kansas Legislators with a higher quality and greater depth of evaluative information than is available to Legislators in other states. The KBA currently provides annual reports to the Governor and the Legislature. In addition, the KBA has produced the Bioscience Index to measure its progress and that of the bioscience economy in Kansas. Unfortunately, many skeptics will not be convinced unless the data and analysis are produced by a neutral, objective source. In order to monitor the progress and performance of the KBA, GSP recommends the following evaluation plan for consideration by Kansas, Inc, KBA, Legislative Division of Post Audit, Department of Labor and Department of Revenue.

#### **Once every four years:**

1. Conduct a professional, objective and comprehensive program evaluation. The evaluation should follow a structure similar to the current RFP, but since the KBA should have a greater track record, subsequent evaluations should include the following:
  - a. A survey of bioscience firms and researchers in Kansas (funded and not funded by the KBA).
  - b. Analysis of KBA Impacts
    - i. Working with the Kansas Department of Labor to compare job creation in a matched sample of KBA clients and non-client bioscience firms.
    - ii. Analysis of KBA inputs (staff, funds) and performance outcomes (jobs, capital, R&D, etc.).
  - c. Benchmarking program performance in other states.
  - d. Operational assessment to include review and approval processes as well as level of staff time devoted to clients.



Annually:

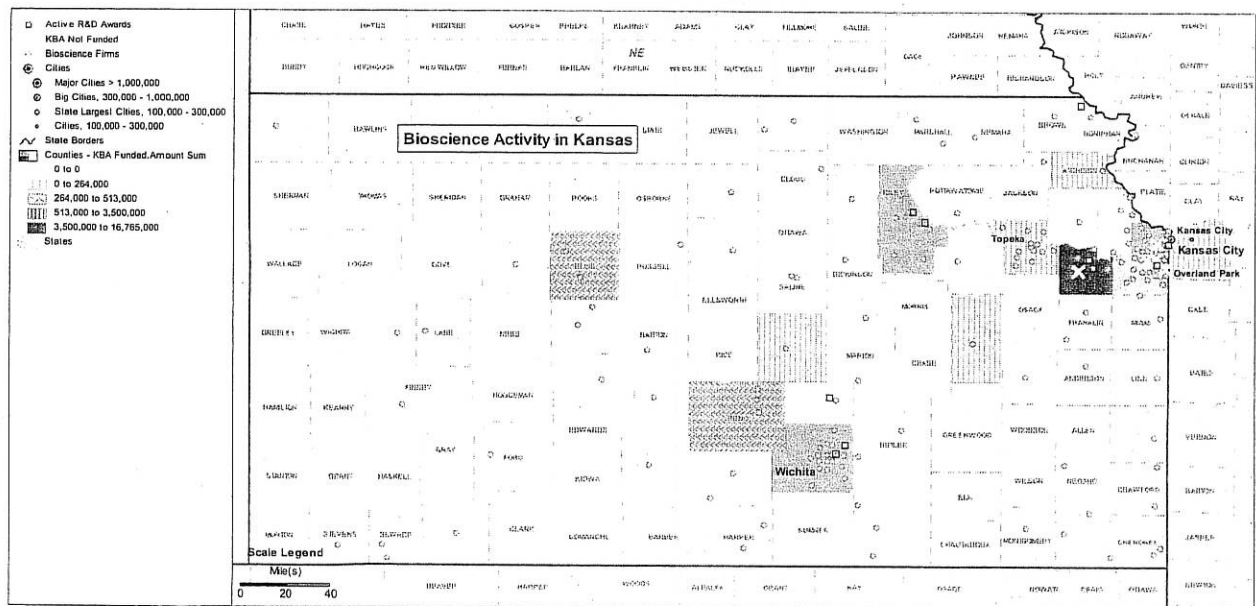
2. Review annual outcomes and distributions

- e. The Department of Revenue currently tracks the quarterly payroll and withholding taxes to determine the distributions to the KBA. Working with the Department of Labor it should not be a great deal of additional effort to analyze the year-to-year payroll growth for the overall Bioscience sector and to summarize how many sectors within the Biosciences increased or decreased payroll.
  - i. Compare inflation-adjusted payroll growth of bioscience sectors to the level of KBA investment and activity (based on KBA commitments and funds paid).
  - ii. Compare inflation-adjusted payroll growth of bioscience sectors to the U.S. growth rate for each sector.
  - iii. Note; Hospitals must be separated or excluded from the performance evaluation because the growth of hospital payrolls are indirectly impacted by KBA investments, therefore their employment gains or losses should not reflect positively or negatively on the KBA's performance.
- f. Measure the progress of biosciences as an independent economic sector. Ideally some measure of the contribution to State Gross Domestic Product (GDP) could be used to compare the development of the Biosciences to other leading sectors in Kansas such as Oil, Aviation and Agriculture. Unfortunately, the BEA does not estimate GDP with sufficient industry detail to compare these sectors. Every five years the Economic Census provides estimates of the value of receipts and shipments, but this data is not frequent enough to be useful. Payroll growth is a useful proxy as the bioscience sector is composed of many service industries in which there is a strong correlation between value-added, revenue and payroll. For example Bioscience receipts and payrolls are 16 percent and 17 percent of Aviation receipts and payrolls respectively. The Department of Revenue could track the Bioscience share of total Kansas payroll and compare it to sectors such as Aviation, Oil and Agriculture.

## Funding/ Service Recipients

One of the items in dispute is the degree to which the KBA should focus its funds rather than provide funds for all regions. Fourteen of the interviews discussed this issue with six people agreeing that the KBA should focus its funding and services in geographic and technical areas where Kansas has strength, while four disagreed and four expressed the need for balance. The map below displays the KBA's funding by county, as well as the location of the 440 Bioscience firms identified by GSP and the active National Science Foundation (NSF) and National Institutes of Health (NIH) research projects. For the most part, the KBA has concentrated its funding in areas of existing strength along the Kansas City to Topeka corridor and around Wichita. However, the distribution of funding is more geographically dispersed than most critics would have predicted.

Figure 9: Map of KBA Investments and Potential Recipients



Source: KBA Pipeline and Outcomes Reports, National Science Foundation, National Institutes of Health, Dunn and Bradstreet.

The KBA has made the strategic decision not to open regional offices in order to maintain a small staff. In comparing the KBA with similar programs, some have chosen to use regional offices and some have not. Those with regional offices tend to have a minimum staff of twenty. The KBA has begun holding Board meetings and community meetings throughout the state to expand the presence of the KBA across the state. The KBA is also able to tap into local economic development partners, KTEC's network of incubators and Network Kansas. Many of these organizations have very few staff, so the KBA will have to consider the most effective strategy for working with them. Currently, the KBA is using the statewide meetings to identify regional specific needs, assets and projects.

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Given that the KBA is working to improve the ranking and reputation of Kansas as a hub of Bioscience activity, the KBA should maintain a focus on building on geographic and technology strengths. Technology development is heavily dependent on scale and proximity. Innovation and entrepreneurship are learning by doing activities that don't transmit over distances, so the KBA should work to build on existing centers of activity, and then focus on filling in the gaps. As the Bioscience community in Kansas develops, it will increase the opportunities and resources to share the wealth.

## Applicants and Recipients

At this time, the KBA has supported 58 projects. The number of individual recipients depends on how you count projects awarded to different departments or institutes at the universities. In terms of private sector projects, 22 unique companies have been supported. The list of clients is provided below.

**Table 33: List of KBA Recipients**

<b>Project</b>	<b>Program</b>	<b>Other assisting agencies</b>
Biosecurity Research Institute, Training and Education Enhancement	Other	
Caravan Ingredients	Attract/Retain	KDOC
Collaborative Biosecurity Research Initiative	Other	
City of Emporia / Renewable Energy Group	Attract/Retain	
City of Junction City- Ventria	Attract/Retain	
City of Manhattan NISTAC	Infrastructure	
Collab Cancer Research Institution	Other	
CritiTech BTIIP	Tax	
CritiTech R&D Voucher	R&D Voucher	KTEC
Edenspace Attraction & Retention	Attract/Retain	KTEC
Edenspace DOE SBIR Phase I	Fed. Match	
Edenspace USDA SBIR Phase I	Fed. Match	
Eminent Scholar- Kansas State	Scholar	
Eminent Scholar- KU	Scholar	
Eminent scholar- Wichita State	Scholar	
Fort Dodge Animal Health	Attract/Retain	
Heartland BioEnterprize	Other	
Heartland BioVentures	Other	
Hospira Phase 2	Attract/Retain	
Hospira Phase I	Attract/Retain	
IdentiGen	R&D Voucher	
ImmunoGenetix Equity	Equity	
Innovia Equity Investment	Equity	KTEC
JACAM	Other	
Kansas Bioscience Fund	Other	
Kansas Bioscience Park	Infrastructure	
KansasBio 2006, 2007, 2008	Other	
Kansas Bioscience Innovation Center in Drug Delivery	Ctr of Innov	

Project	Program	Other assisting agencies
Kansas Center for Biomaterials Innovation and Design	Ctr of Innov	
KBCI- other	Ctr of Innov	
Kansas Bioscience Innovation Center for Advanced Plant Design	Ctr of Innov	
KC BioMediX Equity Investment	Equity	KTEC
Kansas City Area Development Council Marketing Enhancement	Other	
Kansas City Area Life Sciences Institute	Other	
Kansas Environmental Management Associates	R&D Voucher	
KU Breidenthal KUMCRI	Infrastructure	
Materials by Advanced Technologies and Research Innovation Center,	Other	
MGP Research Voucher	R&D Voucher	
NBAF Phase I	Other	
NBAF Phase II	Other	
Nutri-Shield	R&D Voucher	
Onclmmune Loan	Attract/Retain	
Onclmmune Research Vouchers	R&D Voucher	KDOC
OSteoGeneX NIH SBIR Phase I	Fed. Match	
OsteoGeneX SOST Inhibitor	R&D Voucher	KTEC
Pinnacle NIH SBIR Phase 2	Fed. Match	
Quintiles	Attract/Retain	Overland Park, KDOC, Johnson County
Remel Expansion	Attract/Retain	
Sunflower Bioenergy Phase 2	Other	
Sunflower Bioenergy Phase I	Other	
Topeka Chamber- Ventria	Attract/Retain	
TVAX Cancer Treatment	Tax	
Ventria Plant Expansion	Attract/Retain	KTEC
Vince & Assoc Facility	Attract/Retain	
Wet-lab Planning and Architecture	Infrastructure	
Wet-lab Upgrade KCBDC	Infrastructure	

### ***Potential Recipients – Bioscience Related Research Projects***

GSP identified 181 researchers conducting NIH funded research in Kansas working at twelve different firms or institutions. We also identified 81 researchers conducting active NSF funded projects in biology, chemistry, ecology or health working in eleven different firms or institutions, although some have both NIH and NSF projects.

**Table 34: NIH Research**

1. Edge Enterprises, Inc.
2. Emporia State University
3. Flint Hills Scientific, LLC
4. Haskell Indian Nations University
5. International Society/ Neuroethology
6. Kansas State Dept Of Soc & Rehab Services
7. Kansas State University
8. Microvi Biotech, LLC
9. Pinnacle Technology, Inc
10. University Of Kansas Lawrence
11. University Of Kansas Medical Center
12. Via Christi Regional Med Ctr-St. Francis Campus

Source: National Institutes of Health Research Awards.

**Table 35: NSF Research**

1. Baker University
2. Bethel College
3. Haskell Indian Nations University
4. Iowa Tribe of Kansas and Nebraska
5. Johnson County Community College
6. Kansas State University
7. Thermal Solutions, Inc.
8. Uncopiers, Inc.
9. University of Kansas Center for Research Inc
10. University of Kansas Medical Center
11. Wichita State University

Source: NSF Awards Abstracts (for active projects in Biology, Chemistry, Ecology or Health.)

In addition, GSP identified 440 firms in the KBA's Bioscience NAICS codes. It is not practical to list these firms here, but they are identified on Figure 9.

GSP will provide an electronic file with the bioscience firms and researchers.



## Partnership Assessment

Assessing how well an organization collaborated with potential partners is a challenging task. Everyone acknowledges the importance of collaboration and partnering, but few can specify how to concretely improve collaboration. There is a significant division in the economic development community that reflect the same fault lines that have divided what we call the two phases of the KBA.

**Table 36: KBA Funds to Universities**

	<b>Kansas State University</b>	<b>University of Kansas</b>	<b>Wichita State University</b>	<b>Pittsburg State University</b>
Funds Committed	\$ 15,743,000	\$ 12,190,000	\$ 1,111,954	\$ 200,000
Funds Paid	\$ 3,151,058	\$ 1,430,001	\$ 249,058	\$ 66,667
Notes				
	Includes a joint project with University of Kansas.	Includes joint projects with Kansas State, Wichita State and Pittsburg State.	Includes a joint project with University of Kansas and Pittsburg State.	Only funded through a joint project with University of Kansas and Wichita State.

The KBA is also caught between the historic rivalries and current tensions between the universities and has contributed to a sentiment that the KBA is not a neutral collaborator. On the one hand, WSU and PSU are clearly junior partners as demonstrated by the funding distribution in Table 36, but it also reflects the size and quality of the bioscience assets and expertise at KSU and KU. While there are number of joint projects that fund multiple universities, KSU has received \$15.7 million from the KBA, followed by nearly \$12.2 million for KU. The difference between the University of Kansas and Kansas State is not as great as many of the interview comments indicated. These kinds of *fair share* controversies will be circulating regardless, but the KBA can counter some of the criticisms by maintaining a Frequently Asked Questions page or fact sheets that address such issues. The KBA uses third-party evaluators to make recommendations on research-related applications, which limits any influence or bias that could favor a specific proposer. **To be very clear, GSP Consulting does not believe that the KBA has demonstrated any favoritism towards one institution as demonstrated by this distribution of funding.**

Another challenge for the KBA is communicating its programs and activities to economic development organizations and partners around the state. While all partners were aware of the KBA, few had more than a passing familiarity with the KBA's programs. This reflects both the evolution of the KBA's programs as well as the pre-occupation of the partners with their own programs and activities. Part of the traditional etiquette of economic development is that when one agency hands off a lead to another, the referring agency should be included in future



conversations and activities. The KBA could enhance its reputation as a good partner by more diligently tracking which clients are referred by which partners, and then keeping those partners informed of the status of the project. These updates should be in the form of direct one-on-one emails or phone calls to other economic development agencies when the KBA is working with a shared client. In return, the KBA should expect to be kept informed of the interactions that other agencies and economic developers have with their clients. These are more than courtesy calls; they are a standard practice that provides the foundation for building good working relationships within the economic development community. The publication of annual reports, group email blasts or other de-personalized updates don't have the same value as direct contact.

### **Partner Organizations**

The following list of Partner Organizations was identified during the course of our evaluation.

- Alliance for Technology Commercialization (ATC)
- Biotechnology Development Center of Greater Kansas City
- Chambers of Commerce
- Enterprise Center of Johnson County (ECJC)
- Kansas City Life Sciences Institute
- Kansas Department of Commerce
- Kansas State University
- Kansas, Inc.
- Kansas Technology Enterprise Corporation (KTEC)
- Lawrence Regional Technology Center
- Lawrence Regional Technology Center (LRTC)
- Mid-America Manufacturing Technology Center (MAMTC)
- National Institute for Strategic Technology Acquisition & Commercialization (NISTAC)
- Network Kansas
- Pittsburg State University
- Quest Business Center for Entrepreneurs
- University of Kansas
- University of Kansas Medical Center Research Institute (KUMCRI)
- Western Kansas Technology Corporation (WKTC)
- Wichita State University
- Wichita Technology Corporation (WTC)

## Partnership Intensity Index

Based on the interviews and data collected by GSP Consulting, we scored the intensity of activity between the KBA and its various partners based on the criteria below.

Scoring the Partnership Intensity Index	
Collaborated on Projects	Number of joint projects or funding the same clients/projects
Provided Deal Flow	Number of referrals
Understands the Programs	0 = little or no awareness; 1 = general familiarity; 2=working knowledge
Shared Strategy	0 = no technology or Bioscience efforts; 1 = general technology efforts; 2= significant Bioscience focus or efforts

Ideally, the KBA would work most intensively with those organizations that are focused on Biotechnology, followed by those more generally focused on technology development.

**Table 37: Partnership Intensity Index**

	Collaborated on Projects	Provided Deal Flow	Understands the Programs	Shared Strategy	Total
KTEC	6	6	2	1.5	15.5
Kansas State University	8.5	1	2	1	12.5
University of Kansas	7.8		2	1	10.8
National Institute for Strategic Technology Acquisition & Commercialization (NISTAC)	3	2	2	1	8
Topeka Chamber	2	4	1	0.5	7.5
KansasBio	3		2	2	7
Lawrence Regional Technology Center (LRTC)	1	3	1	1.5	6.5
Kansas Department of Commerce	3		2	1	6
Wichita Technology Corporation (WTC)	3		1	1.5	5.5
Wichita State University	1.3	0	2	1	4.3
Pittsburg State University	0.3		2	1	3.3

## Appendix 1: Operations Timeline Provided by the KBA<sup>17</sup>

### October 1, 2006–February 2007 (Establishing an office– initial start-up)

- October 2006 the CEO was hired and office space was rented.
- November 2006, the CEO hired an assistant who had the skills to assist him in setting up an office and to provide secretarial duties.
- November 2006, office furniture was selected, a phone system was purchased, IT consultants was hired to set-up a computer design and plan to fit the projected office needs.
- November 2006, a payroll service was established.
- December 2006, a CFO was hired on a consulting basis with the initial task of establishing an accounting system and prepare for the first audit of the KBA for the period of April 2004 through June 2006.
- December 2006, an accounting package was selected and the process and procedure for entering the previous transactions into the system was established.
- January 2007, policy and procedures were drafted regarding the receipts of cash transactions, purchasing supplies and equipment, and the disbursement of cash.
- January 2007, all of the commitments approved by the KBA board of directors were scheduled and open items were identified. The schedule included the expected outcomes, the milestones, and open items related to each contract, if any.
- January 2007, the audit was initiated for the time period April 2004 through June 2006. All of the schedules requested for an audit were completed along with the footnotes to the financial statements and management discussion and analysis.
- February 2007, a receptionist/assistant was hired to greet guests, answer the phones, assist with accounts payable, filing and other general office assistance.
- February 2007, the financial audit was complete with an unqualified opinion and presented the audit committee for acceptance and recommendation to the KBA board of directors.
- Agreements between investees and KBA established for grants approved in prior periods and in January of 2007.

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<sup>17</sup> This timeline was developed by the KBA and provided to GSP Consulting, it has been included here without alteration.

March 2007 through June 2007 (development of programs and further development of policy and processes)

- Reviewed benefit plans, reviewed state benefit plans, recommended in May 2007 a benefit package which included health, life, disability and a retirement plan to the executive committee of the Kansas Bioscience Authority. The benefits were approved in May 2007.
- Established guidelines and applications for the R&D voucher program, the Matching program, Attraction and Retention program, the Business Tax Incentive Program, and Eminent Scholar Program. These programs were approved by the board in June and July of 2007.
- Established an investment process and policy which includes the following steps:
  - **Program Guidelines and Application Submission:** Each program managed by the KBA has its own unique program guidelines and application materials, but the review process defined below is the same regardless of statutory program.
  - **Application Assessment:** Initial assessment of all application submissions is by a KBA staff member applying program guidelines, eligibility and investment criteria and is based on a review of written submissions provided by the entity seeking investment (e.g., academic research institution, startup, mature company). We reject many opportunities at this assessment stage with an e-mail or telephone call. We aim to qualify submissions quickly before either party allocates and uses significant resources. Each rejected investment submission has the opportunity to request a debriefing session with a KBA staff member and is given the opportunity to reapply with a modified submission.
  - **Scientific and Financial Due Diligence:** All eligible applications are subjected to extensive scientific and financial due diligence, among other evaluation criteria required by the program's guidelines. KBA staff members will conduct due diligence on most investment opportunities but also may choose to contract with outside parties to provide additional capability in unique circumstances.  
  
If, after scientific and financial due diligence, the KBA staff concludes the opportunity to be potentially suitable for investment, an initial project approval is prepared for presentation to the KBA investment committee, a standing committee of the KBA board of directors.
  - **Initial Project Approval (IPA):** During the investment committee IPA meeting, the nature of each opportunity is discussed along with due diligence findings and recommendations provided by KBA staff members or outside contractors and a consensus view determines whether to recommend the investment to the full board of directors for financing.

- **Executive Committee/Full Board of Directors Approval:** Final investment approval is based on a review of the investment proposal by the executive committee and/or board of directors of the KBA. The KBA executive committee and/or board of directors has the right to change terms, funding levels and other financing parameters.
  - **Investment Documentation:** After each investment is approved by the KBA executive committee or board of directors, KBA staff members will complete legal documentation.
  - **Monitoring and Reporting:** All KBA investments will be closely monitored by the authority's staff. This includes reporting required by all investments on project success and progress against milestones and objectives. These reports should provide a clear statement of work including objectives, tasks, milestones and economic development outcomes. Monitoring is also intended to avail the KBA to provide on-going assistance to its investments.
- Prepared and presented to the Investment Committee and the *Board of Directors* a concept page and plan for Centers of Innovation and Heartland BioVentures. Both of these programs were approved in May of 2007.
  - In May and June companies were reviewed applying under the programs and provisions of the statutes and were presented to the investment committee. The committee recommended that these investments go to the Board of Directors in July of 2007 for their consideration. The programs which the companies applied to and taken to the investment committee over this time period were as follows:
    - R & D Voucher -2
    - Matching Program - 1
    - Retention and Attraction - 2
    - Equity/Convertible Debt - 2
  - Prepared for presentation and approval for the July Board meeting the FY 2008 Annual Operating Plan which included detail of each program and operating expense.
  - Began search for a database program that could track all the investments, track milestones and cash requirements, track payments and milestones met, collect post award reporting information and store documents related to each investee.
  - The Board's self-assessments were taken.
  - The KBA Staff and attorney's received a complete set of the documents related to the Bioscience Park in June 2007. These documents were reviewed and discussions were held with the City and additional agreements put in place to provide clarification for KBA. It was essential to have this complete and prepared for the Board's consideration at the July board meeting due to the City's deadlines.

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- An operating bank account and payroll bank account at a bank different than the bank holding the cash investments of the KBA. The accounts were established to provide better controls over the various accounts.
- In June 2007, the purchase authority, bank check signing and investment processing was approved by the Executive committee. These new procedures provided for check signing authority by the CEO/President of the KBA which he previously did not have. Prior to that time the Chairman of the Board or the Chairman of the Board with the CFO had check signing authority.

**July 1, 2007–June 30, 2008** (First year of full operation with an office, staff, policies and procedures, approved programs and an annual operating plan)

- July 2007 hired contract administrator to administer the applications, contracts and program requirements for each investee. (5<sup>th</sup> employee)
- Developed a form to obtain post-award reporting information from each company. This form is sent out annually and is used to update the performance and outcomes of each company.
- Issued Program Guides which listed the investment process, programs guidelines and includes the statutes.
- Annual Board meeting, a new chairperson was nominated and approved, new officers were approved and new committee assignments were made.
- First annual stakeholders' event in Overland Park, Kansas which attracted over 200 people.
- Handbooks were created for each KBA Board committee, the handbook included the charters of the committee, policies related to the committee, latest minutes and any special processes.
- In August 2007 the field work for the audit ending June 30, 2007 was initiated. The audit was completed and presented to the Audit Committee at the end of September 2007. The audit had an unqualified opinion and it was noted that management had implemented process and procedures and the proper internal control procedures.
- In August 2007, the Director of Marketing and Communications was hired and began immediately preparing for the second stakeholder event, web-site updates, and an annual progress report (6<sup>th</sup> employee).
- In September of 2007 a contract was signed for a database program for contract administration. All investments were immediately entered and documentations related to each investee was entered into the program. In addition all information for the first annual post award reporting was entered.



- The first annual report which required by the statutes of the KBA in coordination with Revenue was presented to the Legislators and governor. The report is required and is to report on distributions from the bioscience development and investment fund.
- In September, a stakeholder event was held in Wichita, Kansas. The programs were outlined and the progress of the KBA was reviewed.
- A stakeholder event was held in Garden City, Kansas. In addition meetings were held with community leaders in the Garden City and Dodge City areas.
- An RFP for the planning grants was issued, nine responses were received from the RFP, six were taken to the Investment committee for recommendation, three were recommended by the investment committee to the board of directors and in January 2008 three planning grants were issued.
- In October 2007, the Manager of Financial Reporting and Analysis was hired and has made significant contributions in the areas of reporting and analysis (7<sup>th</sup> employee).
- In November 2007, the Facilities Manager was hired to oversee the construction of the infrastructure of the Kansas Bioscience Park for the KBA, lead the process of the KBA incubator, and review other investments related to incubators and projects in the Bioscience Park (8<sup>th</sup> employee).
- The Legislative Post Auditors began work on audit which was requested by the legislature to determine the impact of economic development. Responses to the audit occurred from the Fall of 2007 through June 2008.
- In January, the Director of Investments for the KBA was hired to direct the investment process and lead Heartland BioVentures (9<sup>th</sup> employee).
- In January, the Marketing Communications Specialist was hired to assist in the outreach to the Stakeholders of the KBA and grantees. (10<sup>th</sup> employee)
- A contract employee was hired in February 2008 in the areas of BioFuels and commercialization services and is continuing to provide services in the area of BioFuels.
- Oakridge Associates University was added as a contractor to provide reviews and evaluations for eminent scholars and other technical reviews as necessary that may be required.
- Policies were created regarding the outcomes metrics; the 4 policies created were for the measurement and recording of jobs, capital expenditures, research dollars and equity investments.
- A Stakeholder meeting was held at Hays and meetings were held with community leaders to discuss bioscience opportunities in their area and learn about the KBA programs.
- In April the board reviewed the conflict of issues policy. Also an investment committee was held strictly for the purpose of strategic direction and planning.

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- The KBA board created a task force to work with Dr. Roy Jensen and the KBA staff to better understand the University of Kansas Cancer Center Comprehensive Cancer Research-to-Care Initiative. In June 2008 the board approved the Collaborative Cancer Research Initiative.
- Prepared 2009 AOP for presentation to the Board in July 2008.
- Second annual post award request prepared and sent to all companies or institutions who received authorization for funding from inception through June 30, 2008.
- An RFP was issued for the construction of the KBA building/incubator.
- An RFP for a Financial Advisor and Legal counsel was issued in June of 2008.

**July 1, 2008– October 8, 2008, 2008 (An operating organization–no longer a start-up)**

- Contracts were initiated to provide services to Heartland BioVentures for assisting clients and a contract was entered into with BioEnterprise out of Ohio to assist with the development of Heartland BioVentures.
- Annual Meeting of the KBA was held as well as the meeting of the Board of Directors. The election of officers was held and committee assignments made.
- The attorneys reviewed the board self-assessment and reminded the board of the conflict of issues policies.
- The annual post-award reporting information was received from the companies, reviewed and updated in the contract management database.
- Responses were received from four firms in response to the Financial Advisor RFP; the responses were evaluated, interviews held and a recommendation was made to the executive committee which was approved on September 29, 2008.
- Responses were received from three law firms in response to the Legal RFP. The responses were evaluated, the firms were interviewed and a recommendation has been prepared for the October executive committee.
- The KBA employee handbook was completed and presented to all employees.
- The FY 2009 Annual Operating Plan was approved on August 15, 2008.
- The KBA program evaluation was initiated by Kansas Inc.
- The Legislative Division of Post Audit concluded the final phase of the performance audit focused on the effectiveness of economic development spending in the state. LPA presented its final performance audit before the Legislative Post Audit Committee on August 26<sup>th</sup>. The performance audit report highlighted the KBA's monitoring and reporting process. The audit included on recommendation for the Kansas Technology Enterprise Corporation. No recommendations were made regarding the KBA's

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processes. The audit was referred to various committees of the Legislature for their consideration.

- The KBA financial audit field work performed by Allen Gibbs and Houlik began on August 18<sup>th</sup> and a draft audit report was presented to the KBA Audit committee on October 6<sup>th</sup>. The KBA received an unqualified opinion which is the highest opinion an organization could receive. There were no significant deficiencies found.
- On Sept. 18, 2008, KBA published and distributed more than 700 copies of the first-ever Kansas Bioscience Index, with recipients including key KBA partners, Gov. Sebelius, the Legislature, the congressional delegation, and economic development officials. The index was presented in person to the Legislature's Joint Committee on Economic Development, CEO Tom Thornton offering testimony and taking questions.
- A Stakeholders meeting was held in Wichita and meetings were held with industry executives and university officials.
- The presentations related to the responses to RFP for an architect for the KBA building were reviewed and evaluated in conjunction with the State of Kansas's Division of facility management. An architect was selected and planning has begun.
- The Investment committee met three times since the July 15<sup>th</sup> board meeting and they are recommending \$10,132,680 of investments to 7 companies or institutions for consideration and approval by the board at the October meeting.
- Chuck Willis began employment with the KBA on October 1, 2008 as Director of Commercialization, Heartland BioVentures. (11<sup>th</sup> Employee).
- Bret Healy began employment with the KBA on October 1, 2008 as Director of Commercialization. (12<sup>th</sup> employee.)
- Lindsay Holwick began employment with the KBA on October 13<sup>th</sup> as Director of Special Projects. (13<sup>th</sup> Employee).
- An advisory board of directors was recruited for Heartland BioVentures. The board of advisors will be chaired by Bill Sanford and charged with assisting the Authority in fulfilling its goals for, among other things, formulating and coordinating a comprehensive plan to promote the commercialization of bioscience innovations leading to economic growth in the state and position Kansas for leadership in bioscience technologies and production. Other advisory members are:
  - **John L. Brooks III**, President and Managing Director Medical Capital Group. Medical Capital Advisors provides strategic and investment banking advice to leaders in the medical technology sector.
  - **Tim Ceserak**, President, Koch Genesis. Koch Genesis is venture capital arm of Koch Industries, the world's largest private company.

- **Dr. Steven St. Peter, General Partner, MPM Capital.** MPM Capital is the world's largest life science–dedicated venture investor, with committed capital under management in excess of \$2.5 billion.
- **Tom Wiggans,** most recently served as CEO of Connetics Corporation, a biotechnology company until it was acquired by Stiefel Laboratories, Inc. Tom has been the chief executive of several growth stage bioscience companies.

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## Appendix 2: Background Material

### GSP Coding of Project Sectors

Project	Sector	Date Approved
Heartland BioEnterprize	NPO	1/5/2006
KansasBio 2006 Convention	NPO	1/5/2006
Hospira Phase I	Private	4/11/2006
IdentiGen	Private	4/11/2006
JACAM	Private	4/11/2006
Quintiles	Private	4/11/2006
Caravan Ingredients	Private	7/13/2006
City of Manhattan NISTAC	LG	7/13/2006
CritiTech R&D Voucher	Private	7/13/2006
KCADC Marketing Enhancement	NPO	7/13/2006
KCALSI	NPO	7/13/2006
MGP Research Voucher	Private	7/13/2006
Nutri-Shield	Private	7/13/2006
Sunflower Bioenergy Phase I	Private	7/13/2006
Topeka Chamber- Ventria	NPO	7/13/2006
Wet-lab Planning and Architecture	NPO	7/13/2006
Wet-lab Upgrade KCBDC	NPO	7/13/2006
City of Junction City- Ventria	Private	10/12/2006
Onclmmune Loan	Private	10/12/2006
Onclmmune Research Vouchers	Private	10/12/2006
Hospira Phase 2	Private	1/9/2007
Kansas Bioscience Park	NPO	1/9/2007
KansasBio 2007 Convention	NPO	1/9/2007
NBAF Phase I	NPO	1/9/2007
Sunflower Bioenergy Phase 2	Private	1/9/2007
Edenspace Attraction & Retention	Private	3/13/2007
Kansas Bioscience Fund	NPO	5/24/2007
Heartland BioVentures	NPO	5/25/2007
KBCI- KBICDD	NPO	5/25/2007
KBCI- KCBID	NPO	5/25/2007
KBCI- other	NPO	5/25/2007
KBCI Plant Desigon	NPO	5/25/2007
City of Emporia REG	NPO	7/10/2007
Fort Dodge Animal Health	Private	7/10/2007
Innovia Equity Investment	Private	7/10/2007
KC BioMediX Equity Investment	Private	7/10/2007
OsteoGeneX SOST Inhibitor	Private	7/10/2007
CBRI	NPO	9/28/2007
CritiTech BTIIP	Private	9/28/2007
KansasBio 2008 Platinum	NPO	9/28/2007
KEMA	Private	9/28/2007

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<b>Project</b>	<b>Sector</b>	<b>Date Approved</b>
NBAF Phase II	NPO	9/28/2007
Remel Expansion	Private	9/28/2007
Edenspace DOE SBIR Phase I	Private	11/26/2007
Edenspace USDA SBIR Phase I	Private	11/26/2007
Eminent Scholar- Kansas State	NPO	1/16/2008
Eminent Scholar- KU	NPO	1/16/2008
MATRIC	NPO	1/16/2008
Pinnacle NIH SBIR Phase 2	Private	1/16/2008
BRI Training and Education	NPO	2/26/2008
Eminent Scholar- Wichita State	NPO	4/8/2008
KU Breidenthal KUMCRI	NPO	4/8/2008
Collab Cancer Research Institution	NPO	6/5/2008
ImmunoGenetix Equity	Private	6/5/2008
OSteoGeneX NIH SBIR Phase I	Private	6/5/2008
TVAX Cancer Treatment	Private	6/5/2008
Ventria Plant Expansion	Private	6/5/2008
Vince & Assoc Faculty	Private	6/5/2008

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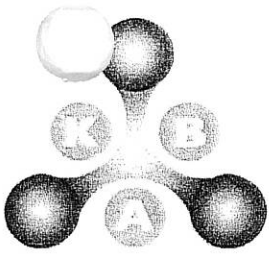


### GSP Coding of University Projects

KU	KSU	WSU	PSU	Project	Funds Committed
	Yes			BRI Training and Education	1,548,000
	Yes			CBRI	2,500,000
Yes				Collab Cancer Research Institution	2,500,000
	Yes			Eminent Scholar- Kansas State	2,055,000
Yes				Eminent Scholar- KU	5,000,000
		Yes		Eminent scholar- Wichita State	911,954
				Kansas Bioscience Fund	100,000
	Yes			Kansas Bioscience Park	7,600,000
Yes				KBCI- KBICDD	180,000
Yes		Yes	Yes	KBCI- KCBID	200,000
				KBCI- other	420,000
Yes	Yes			KBCI Plant Design	200,000
				KCADC Marketing Enhancement	41,200
Yes				KCALSI	10,000
Yes				KU Breidenthal KUMCRI	2,000,000
Yes				MATRIC	2,000,000
	Yes			NBAF Phase I	250,000
	Yes			NBAF Phase II	440,000
	Yes			Wet-lab Planning and Architecture	150,000
Yes				Wet-lab Upgrade KCBDC	100,000
	Yes			City of Manhattan NISTAC	1,000,000

Note: GSP did not count R&D Vouchers where the company works with a university as those decisions are made by the company not by the KBA.

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January 7, 2009

Partners in Bioscience Growth

Mr. Stan Ahlerich  
President  
Kansas Inc.  
632 SW Van Buren, Ste. 100  
Topeka, KS 66603

Dear Mr. Ahlerich:

On behalf of the Kansas Bioscience Authority (KBA), thank you for your extensive work in evaluating the authority and for the opportunity to respond to your final report. This letter serves to summarize the response we conveyed in our meeting with you and your staff to discuss the evaluation and its recommendations.

The biosciences are a key part of the state's economic development strategy developed by Kansas Inc. Recognizing the critical importance of bioscience to Kansas' long-term competitiveness, and building on previous efforts, the Kansas Legislature established the KBA with the visionary Kansas Economic Growth Act in 2004. The clear intent was for the KBA to boldly lead efforts that will position Kansas for national and international leadership in the biosciences over the long-term.

Your report clearly indicates the KBA is adhering to its statutory intent and exceeding the expectations of its stakeholders. Operations are in place, programs and funding mechanisms have been implemented, and, more importantly, in four short years we have accomplished extraordinary outcomes.

Kansas' research base is expanding. The state has asserted national leadership in key bioscience clusters. Kansas entrepreneurs are developing cutting edge products to fight cancer and other human health challenges. Foreign companies and researchers are moving to Kansas. Investors nationally are betting on Kansas companies.

Though there were skeptics when the KBA was formed, today Kansas is ranked in the Top 10 states in the nation for biotechnology according to *Business Facilities* magazine — a clear sign of the strong momentum we are building in the biosciences.

The development of clear and formal operational and programmatic policies was a major priority when I joined the KBA in October 2006. Within six months, program processes, policies and procedures were implemented, allowing the KBA to function as intended. During this time, the pace of our investments accelerated each year, resulting in strong investment returns, and we worked extensively to expand awareness of the KBA.

The key to our success, though, is our focus on excellence in operations.

An entrepreneur recently said that the KBA is increasingly viewed as "smart money," and I'll accept that. Like a venture investor, we have adopted an investment strategy with the following key elements:

1. Key to the KBA's investment thesis is **focus**. The KBA is focusing its investments in key clusters, like animal health and bioenergy, in which Kansas has the opportunity for national leadership.
2. **Diversification**: KBA investments emphasize research, commercialization and expansion. No one of these will get us to national leadership. We must invest in each, and each supports the other.
3. KBA investments are **game-changing**. Like a good investor, the KBA is looking to invest in disruptive technologies where Kansas can establish leadership.
4. The KBA investment process is highly **evaluative**. Each application we receive is subject to a rigorous evaluation by KBA staff and the board of directors.
5. The KBA serves as a **strategic partner** for its investments. The KBA is committed to provide strategic assistance to every investment we make to ensure its ultimate success.
6. Focus on **outcomes**: The KBA expects returns on its investments, measured by such factors as increased federal R&D investment, venture capital investment and job creation.

In FY 2008, the KBA committed over \$25.5 million to 24 bioscience investments. Our strong investment returns so far include 1,107 new jobs, \$93 million in private capital investments, \$37 million in new R&D investments and \$219 million in federal R&D investments coming back to Kansas. Over the next five years, the outcomes of these investments are expected to jump to over 4,575 new jobs, \$1 billion in capital expenditures and \$49 million in new federal R&D investments.

Perhaps the best example of the KBA's commitment to research is our successful efforts to bring the National Bio and Agro-Defense Facility (NBAF) to Kansas State University. In part because of our state's unmatched commitment to expanding bioscience capabilities, we were chosen to house this \$650 million federal scientific laboratory that will protect America's food supply and agricultural economy while leading to an estimated 470 new jobs in Kansas. The NBAF is a prime example of the magnitude of the KBA's success in positioning Kansas as the place to be for bioscience innovation.

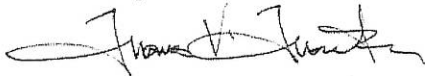
We are thankful to the state of Kansas, as well as local and federal officials, for coming together to make our state a bioscience leader, when just a few years ago it was not thought possible by skeptics on the outside.

As a state, we are being proactive, and we are being smart. By investing in Kansas' areas of existing bioscience strengths, we are developing our economy for the 21st century, while also positioning Kansas for national leadership in sectors that will dramatically improve our health and quality of life. From research to commercialization to cluster expansion, it is clear Kansas and the KBA are on the right track.

With respect to your recommendations, we embrace the continuation of the KBA's funding mechanism. It is unique nationally, and in these challenging economic times it will ensure Kansas' innovation economy leads our recovery. As we strive to be the very best economic development organization in the nation, additional recommendations for benchmarking and potential program ideas are very useful to improve and build upon the KBA's overall structure and success.

This report will help guide our steps toward future investments and expansion in the bioscience community. We appreciate the opportunity to provide feedback and look forward to using your recommendations to improve the KBA and, ultimately, provide an even better return for Kansas.

Sincerely,



Tom Thornton  
President and CEO