

INGRAM'S

# Biotechnology

Industry Outlook

# 07

JANUARY 2007 | VOLUME 7 NUMBER 1



## Biotechnology Industry Outlook

**Kelly Gillespie**, MO BIO

**Bill Duncan**, Kansas City  
Area Life Sciences Institute

**Sean Hart**, UBC Late  
Stage Group

**John Gardner**, University  
of Missouri System

**James Guillory**, Kansas City  
University of Medicine  
& Biosciences

**Jeff Biskup**, Clark  
Richardson & Biskup  
Consulting

**Keith Gary**, Kansas City  
Area Life Sciences Institute

**Jake Halliday**, Missouri  
Innovation Center

**Jim Guikema**, Kansas  
State University

**Jeff Southard**, VasoGenix  
Pharmaceuticals

**Linda Cook**, Midwest  
Research Institute

**Joan Hunt**, University of  
Kansas Medical Center

**David Franz**, Midwest  
Research Institute

**Sandra Willsie**, Kansas City  
University of Medicine  
& Biosciences

**Lesla Mitchell**, Kauffman  
Foundation

**Beth Montelone**, Kansas  
State University

**Michael Chippendale**,  
Chippendale Consulting, LLC,

**Scott Weir**, University  
of Kansas Medical Center

### BioSciences Surge Into the Future

That 2006 proved to be an eventful year for the life sciences in Kansas City no one could deny. The twenty or so life science leaders, who gathered at *Ingram's* offices in the Freight House District early January, were eager to compare notes.

The assembly was part of *Ingram's* widely read and highly praised Industry Outlook series. Chairing the session was Bill Duncan, president of the Kansas City Area Life Sciences Institute (KCALSI), which co-sponsored the event with Midwest Research Institute (MRI) and Kansas State University.

This year, those gathered not only cited past progress, but they also suggested some highly creative and productive paths to the future.

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**Challenges**

The overall mood of the assembly was optimistic and upbeat. Although fully aware of the challenges they face, participants did not shy from facing them head on. "I don't know what we would be doing if there weren't challenges," said Lesa Mitchell with the Kauffman Foundation. "I just can't figure out what's the biggest one."

"The biggest challenge for the University of Missouri," said John Gardner, vice president for research and economic development, "is to be a public research institution in the new economy." This involves preparing students to not only get jobs but also to create jobs. It also means enabling the faculty to be active participants in the new economy as educators and researchers.

Jeff Biskup, an MU grad and "the B of CRB," a bio-oriented 400-person engineering firm, wants MU to succeed in its mission. His firm's great challenge is finding and developing new talent. "We have far more work than we can do," said Biskup.

"I feel in terms of what I am worried about day by day," said Jake Halliday, president and CEO of the Missouri Innovation Center, "is trying to make sure that entrepreneurs are limited only by their imagination and not by infrastructure."

Keith Gary, the director of program development at KCALSI, works on any number of critical issues with his constituents—workforce development, advocacy, scientific collaboration. What challenges him most is "reining in the herd and keeping them headed in the same direction."

"More than anything else," affirmed Kelly Gillespie, "the challenges that we face have to do with uniting a life sciences community to make sure that the public is putting forth science-friendly and business-friendly approaches to the life sciences."

Sitting in for MRI CEO Jim Spigarelli, called away for an urgent DC meeting, was Linda Cook, MRI's director of communications. As Cook explained, the



1: The 2007 Biotechnology Industry Outlook assembly was held at *Ingram's Magazine* in Kansas City. | 2: Keith Gary of the Life Sciences Institute discussed the challenges associated with aligning regional advocates. | 3: Jeff Biskup, principal of Clark Richardson Biskup Consulting explored the importance of workforce development in the life sciences sector. | 4: David Franz encouraged colleagues to get involved in political process and appointments.

1800-employee Institute has experienced considerable growth in the last several years. "Our big priority is how to maintain that momentum and how to keep it going," she noted. MRI has a particular eye on Defense funding.

"I see one of the major problems as senior, knowledgeable leadership in government, the people who are making the decisions," said David Franz, who works with both MRI and Kansas State University. He also saw the need for finding and developing young people to do the work when contracts come in.

Sandra Willsie is executive vice president for academic affairs at Kansas City University of Medicine and Biosciences (KCUMB), the largest medical school in Missouri. "Our daily challenge," she

commented, "is recruiting, retaining and continually having funding for highly talented, devoted researchers and keeping them from straying away from the pack."

Jeff Southard, co-founder and vice president of clinical development for VasoGenix Pharmaceuticals, noted that his company was successful as a start-up in getting all the seed funding that was available at the time. "Where we really struggled," he added, "was in getting the followup on funding to get to the next level." Part of the problem, he added, "is getting recognition on the East and West coasts."

Lesa Mitchell affirmed Southard's point, stressing that the recognition problem was not limited to Kansas, but encompassed the greater Midwest. So, too, did Scott Weir, a research administra-

tor with the University of Kansas. One of the challenges KU faces, especially the cancer center, is the ability to advance promising compounds coming out of drug discovery within the university. "In order to be able to do that we need to raise funds," said Weir.

Mike Chippendale had served as interim director of the Bond Life Sciences Center at the University of Missouri before leaving to start a consulting company dealing with life sciences facilities. His immediate need is to find a niche and establish a clientele, but the larger issue, as he sees it, is how we should be designing lab facilities to incorporate 21st century realities.

Jim Guillory, associate dean of research at KCUMB, cited "conflicting priorities within the institution" as a pressing concern. For more than 100 years, the institution has been educating physicians. Now the challenge is to educate scientists, biochemists, laboratory people. "It's a culture change that we are going through," said Guillory.

"I will be echoing what Jim has said," commented Beth Montelone, associate dean for research at the College of Arts and Sciences at Kansas State University. As a public research university, Kansas State University is charged with both educating the youth of the state of Kansas and with finding opportunities for its high quality researchers.

"One of the things I care deeply about is that integration between the public and the private sector," said Jim Guikema, associate vice provost for research at K-State. His goal is to leverage the region's collective resources in ways that wouldn't be possible unless everyone worked together. "In plant science and animal science and human health," said Guikema, "we want to make some partnerships work."

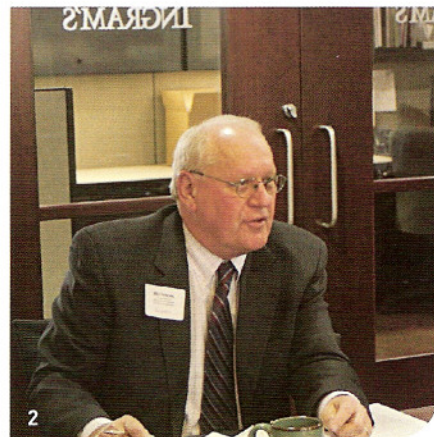
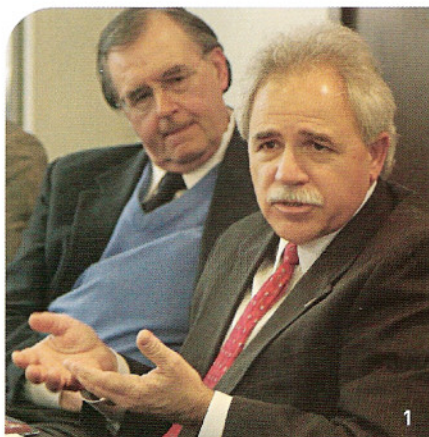
Joan Hunt, the multi-tasking research administrator from the University of Kansas Medical Center, reinforced Guikema's point. She sees the need "to change the culture" so that researchers in academic institutions gain interest in

developing partnerships with industry. "We have a long way to go," she noted, "but we have efforts underway."

### Progress

In addition to securing resources—an unending challenge—Bill Duncan cited the need to "unite the community behind the overall life sciences initiative." He asked his colleagues to give their perspective on just how far the initiative has come in the last six years.

Sandra Willsie cited "the instances of collaboration between institutions" that has markedly increased since the development of KCALSI. "We certainly see a lot more joint appointments," agreed Duncan. "We see a lot more collaborative research efforts."



1: Jim Guillory discussed the evolution occurring at KCUMB to educate and train specialists in science and research among its students. | 2: Bill Duncan took the helm of the Kansas City Area Life Sciences Institute for a 6-month term in 2000 and continues to build an organization that exceeds many of his colleagues' expectations.

In terms of new and renovated facilities, Duncan pointed to the progress at KCUMB, MRI, UMKC, and at KU. As Joan Hunt elaborated, KU has a gleaming new 207,000 square foot biomedical research building.

At MU, John Gardner noted, a new incubator is starting construction in May and there are two other facilities coming on line in the research park, including a new rodent diagnostic lab. "The facilities are unbelievable," said Gardner.

Linda Cook cited the five new start-

ups in the Kansas City area. Duncan noted that even though KCALSI is not in the funding business, fourteen companies approached him last year looking for early stage capital. "There is certainly increased activity," he added, "and we are seeing venture capitalists nose around a bit."

As Keith Gary explained there is a slow change underway in the culture among academics investigators. For their discovery to really have an impact on the human condition, they have got to get it out of the laboratory. Said Gary, "This is something that we have to continually work towards educating academics about."

A good deal of discussion centered around SBIR (Small Business Innovation Research) grants. "It is free money, said Lesa Mitchell. "That is the best way to

look at the program." The Kauffman Foundation will, in fact, be hosting the National SBIR Conference in May, "which will bring a lot of awareness and exposure of the SBIR program to Kansas City.

### Amendment Two

In November 2006, Missouri Amendment Two, which granted constitutionally-based permission for embryonic stem cell research, won a narrow margin among Missouri voters after a heated

campaign. Bill Duncan asked how the amendment's passage affected the area's reputation and its ability to recruit.

"There was a notice by national players," said Kelly Gillespie, who shared his experience at a national Bio meeting, about what had happened here in the Midwest. "For the most part," he said, "their message that they got was, 'It passed, it's resolved, and they have their act together.'"

"Obviously, the amendment passing," said John Gardner, "we view as very positive." But, he conceded, anyone who knows Missouri politics knows it was certainly no mandate. "As a public research institute," said Gardner, "we have to be sensitive to what the public said in Amendment Two but we also have to be sensitive to what our lawmakers are

saying in Jefferson City. We are sensitive to both."

Gardner saw a role for the university in increasing science literacy among the public. On the Kansas side, Jim Guikema saw a parallel role for K-State. "The momentum that is created has to keep going in an educational sense," said Guikema. "We need an informed citizenry or all our businesses can fold up."

"I think the vote in Missouri has been a very positive aspect for Kansas," agreed Joan Hunt. "If it had lost, it would have made our job much more difficult. But I think both states need to recognize that this is not a simple resolution. It is in fact an ongoing involvement."

"Those of us who work in the life sciences, biotech arena have a responsibil-

ity to reach out and do the best we can to increase public understanding," agreed Mike Chippendale.

David Franz cautioned that within the beltway, many people are still talking about the potential abuse of biotechnologies, about the harm researchers can cause either inadvertently or intentionally. As a result, one has to be conscious of "walking that line between regulation and freedom and progress."

Sean Hart, President of United BioSource Corporation—Late Stage Group, argued that Amendment 2 helped shine the spotlight on the Midwest. "All of a sudden, people are talking about Missouri and what's going on in Missouri," he observed. "Whether that's a good thing or not, at least it gets us noticed."

In acknowledging that 49% of Missourians voted against Amendment 2, Kelly Gillespie conceded that the bond between the life science movement and a good percent of its citizens had been eroded. "It's got to be repaired," said Gillespie. "It's got to be addressed. The battle did not end November 8th."

Jeff Southard suggested one possible way to get beyond the current political friction. "Why not focus on something else that is a little more politically acceptable and generate success for the region," said Southard. He referred specifically to peripheral or adult stem cell research. "Suffice it to say," said Bill Duncan in summary, "the battle is not over."

### On the Horizon

For the University of Kansas, Scott Weir noted, the number one priority is to establish an National Cancer Institute (NCI) designated comprehensive cancer center. The first step in that process is NCI designation as a "cancer center." The goal for this designation is 2010. The goal for "comprehensive cancer center" status is 2016.

"What [comprehensive status] means," said Weir, "is cutting-edge research in the area of cancer, both basic research as well as clinical research." Weir estimated a \$1.3 billion economic impact in the region in the first year alone, 2016.



1: University of Kansas Medical Center administrator Joan Hunt works as a bridge-builder within the KU system to bring science to the forefront of the university's mission. | 2: Scott Weir of KU discussed strategy to position the medical center as a NCI-designated Cancer Center. | 3: Jim Guikema of K-State reported on the many scientific advancements occurring in Manhattan.



1: Lesa Mitchell of the Kauffman Foundation discussed the importance of recruiting top-notch scientists to the Kansas City area. Jeff Southard of VasoGenix Pharmaceuticals observed. | 2: MO Bio Executive Director Kelly Gillespie discussed the importance of uniting organizations in the bi-state region.

“From a communications standpoint,” commented Linda Cook. “These locations will require a lot of support from all the constituents because there will be opponents to this type of activity going on in their area.” It is in situations like these that a unified life sciences effort can bear fruit. “There’s got to be a significant public outreach program,” affirmed Duncan.

**Recruitment**

There was obviously a good deal of enthusiasm among the group about new facilities, but Lesa Mitchell wondered whether there was as much emphasis on recruiting “really great people” for those buildings. “I am probably the last person who should be encouraging us to recruit rock star scientists,” said Mitchell, “but I would encourage us to recruit rock star scientists.”

Jim Guikema contended that K-State does have a “track record of getting good, young people, high-quality investigators that are on the onset of their careers.”

“Rising stars,” added Bill Duncan. “Not rock stars yet.”

Joan Hunt acknowledged that area institutions have to “offer more” to attract up and comers. She was referring not just to money but to the opportunity for innovation and leadership. “The medical center has been hugely successful in this,” she noted, hiring some 23 research scientists in the last year alone.

In the private sector, observed Sean Hart, recruiting is a little easier, “because the funding is there to make things happen.” What he has witnessed on the tech side is a given area pooling resources and approaching the marketplace with a coherent message. “I wonder if we have created a single message,” he said of the Kansas City region. “I don’t know if we have done enough.”

“One of the things that we have benefited from,” said Jeff Biskup, “being a Midwest company, a company that grew up in Kansas City and has expanded from there is that our culture is based on a Midwest work ethic and our business style is very much known as smart guys that work hard.”

“We hear that all the time from companies that are considering here,” confirmed Duncan. He cited some statistics to show how the combination of work ethic and life science promotion through KCALSI “without question is having an impact on the region and our ability to recruit, attract companies on a regional basis.”

**Animal Health**

Bill Duncan sees the NBAF as “a seminal opportunity for us as a region.” As Duncan noted, some 30% of the global animal health market is generated by the greater Kansas City region. The NABF would seem a natural fit.

“There are so many aspects of biotechnology and the life sciences where we can wear the white hat,” said Kelly Gillespie. “Why not put animal health out front where it is a unifier for both sides of the state line and one that is going to pull Missouri and Kansas even stronger together?”

Jeff Biskup saw a further advantage in the region’s status as an animal health center. As he pointed out, animal health producers are doing their bioprocess manufacturing much more efficiently than are most of the human biopharmaceutical manufacturers. This may well attract those generic human health manufacturers looking for an efficient, low cost environment.

Mike Chippendale argued the veterinary schools, the animal science schools, K-State and MU, to step up and underpin future developments in animal health with the necessary research. “This is one side of it that we’ve got to look at closely,” said Chippendale.

“I think it’s clear that innovation in the animal health companies is just as important as it is on the human side,” said Duncan, arguing from an economic development perspective.

**Bio-fuels**

All agreed that plant science can and should be a critical part of the life science movement, which led to a discussion of perhaps the most promising development for the region in that regard.

"I saw a map recently provided to me by the Department of Commerce in Kansas," said Bill Duncan, "that had all of the production facilities for ethanol and bio-diesel and all those planned and I could not believe it. I couldn't even count them all." He added that Missouri is equally rich in these facilities. "Where do you think this is headed?" he asked.

"We think it plays to a lot of Midwest natural strengths," said John Gardner. Gardner referred specifically to the area's rich combination of agriculture and life science. He made the salient point, however, that if we were to consciously plan to "produce bio-energy from the sun using plants as a converter," we would design a bio-system unlike the one that currently resides on the agricultural landscape.

"I think we would have a totally different solution," said Gardner. "That is the long-term horizon that is exciting for the Midwest, for the expertise that resides in our institutions, and our expertise in

the business sector as well."

In addition to the ethanol production from sugars and carbohydrates, Jake Halliday observed that there appears to be an emerging federal funding opportunity in cellulosic fermentation. "These plants are already commercial and successful and they work," said Halliday, but he cautioned that the cellulosic is a bit more challenging to do economically.

"I think that's the whole problem for any company right now," commented Jeff Biskup. "We are a long way from the real answer. We are burning more energy making it than we are getting out."

Although Kelly Gillespie expressed concern about farmers too eagerly embracing these technologies and putting their own money into plants that might fail, he saw a real benefit to the life science movement. "Suddenly in the capital," he says, "biotechnology equals the destruction of embryonic stem cells has been moved to biotechnology is something that is good

for farmers, good for consumers, good for sustainable energy. It's a big positive."

### Sustainability

Joan Hunt asked the day's final question of chair Bill Duncan on how the KCALSI hoped to "maintain the level of enthusiasm" the area has seen over the last six years.

"I the early days," said Duncan, "when we tried to facilitate collaboration amongst the scientists, that was pretty hard. Herding those cats was not easy. Nowadays, it's a lot easier."

"We don't do as much hand-holding as we used to from my perspective," Duncan continued. "So I think that's good. You know, I honestly believe sustainability is directly proportional to resources available. If those resources are real, and I think they are, I have to tell you I am as excited and encouraged, more than I have ever been as far as the success of this initiative on a regional basis." ■

# Strategy for Success

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