

INDUSTRIAL MUSCLE PROPELS BIOSCIENCES

All across the country, and in Puerto Rico, officials continue to build on strengths to retain and attract biosciences' firms.

By Lou Ann Thomas

The commonwealth of Puerto Rico and the state of Kansas could not be less alike. Puerto Rico is known for its sunny beaches and a strong pharmaceutical manufacturing sector. Landlocked Kansas is better known for agribusiness and waving wheat fields than for waving palm trees. But when it comes to attracting diverse bioscience industries, Puerto Rico and Kansas join states like Wisconsin and Indiana in finding success.

Building on its pharmaceutical manufacturing base, Puerto Rico is developing a 1-million-square-foot life sciences campus in San Juan. The Puerto Rico Science, Technology and Research Trust plans to transform the 83-acre Oso Blanco state penitentiary site into a four-phase biotech campus that will broaden the island's life science industry.

Science City, the 250,000-square-foot, \$400 million first phase of the project is under construction now, and will be

part of a 2,000-acre Knowledge Corridor, linking the research and development campus to existing biomedical institutions, as well as new ones being built.

"This project will also include residential, commercial and public open space," says Enrique Mirandes, director of life sciences, Puerto Rico Industrial Development Corp. "It will have a feeling of a vibrant city where people live, work and play in the same location." This project will be linked, via a new urban train system, with a 90,000-square-foot molecular science facility; a 40,000-square-foot expansion of the Puerto Rico Cancer Center; and a 5,000-square-foot pavilion that will allow the botanical garden to conduct research on medicinal and poisonous tropical plants. The botanical garden is also renovating a university lab building into 10,000 square feet of new wet labs.

In the western Puerto Rican city of Mayagüez, a 17,000-square-foot facility is under construction that will house

research space for researchers at the University of Puerto Rico Mayagüez in addition to bioprocessing facilities for early stage companies, as well as space for training pharmaceutical manufacturing employees.

"We're very excited about all of these projects, which will serve as part of our larger Knowledge Corridor," Mirandes says. "We foresee continuing to attract investments and industries to the island, particularly in the life sciences sector." The biotechnology, pharmaceutical and medical device industries represent 29.3 percent of the gross domestic product of Puerto Rico, generating 38,500 direct jobs and nearly 100,000 indirect jobs on the island.

Because of Puerto Rico's commonwealth status with the

United States, the island offers investors U.S. regulatory standards and protections, while providing offshore tax benefits.

If Puerto Rico is finding success building upon its 50-year history of manufacturing, then Kansas hopes to do the same by focusing on its history in animal science and animal health. "We're looking at our strengths and building from there," says Chad Bettes, director of marketing and communications, Kansas Bioscience Authority.

As part of the Kansas Economic Growth Act, passed by the Legislature in 2004, the Kansas Bioscience Authority was established and given \$581 million to use during the next 10 years to 15 years to pursue additional bioscience research and industry.

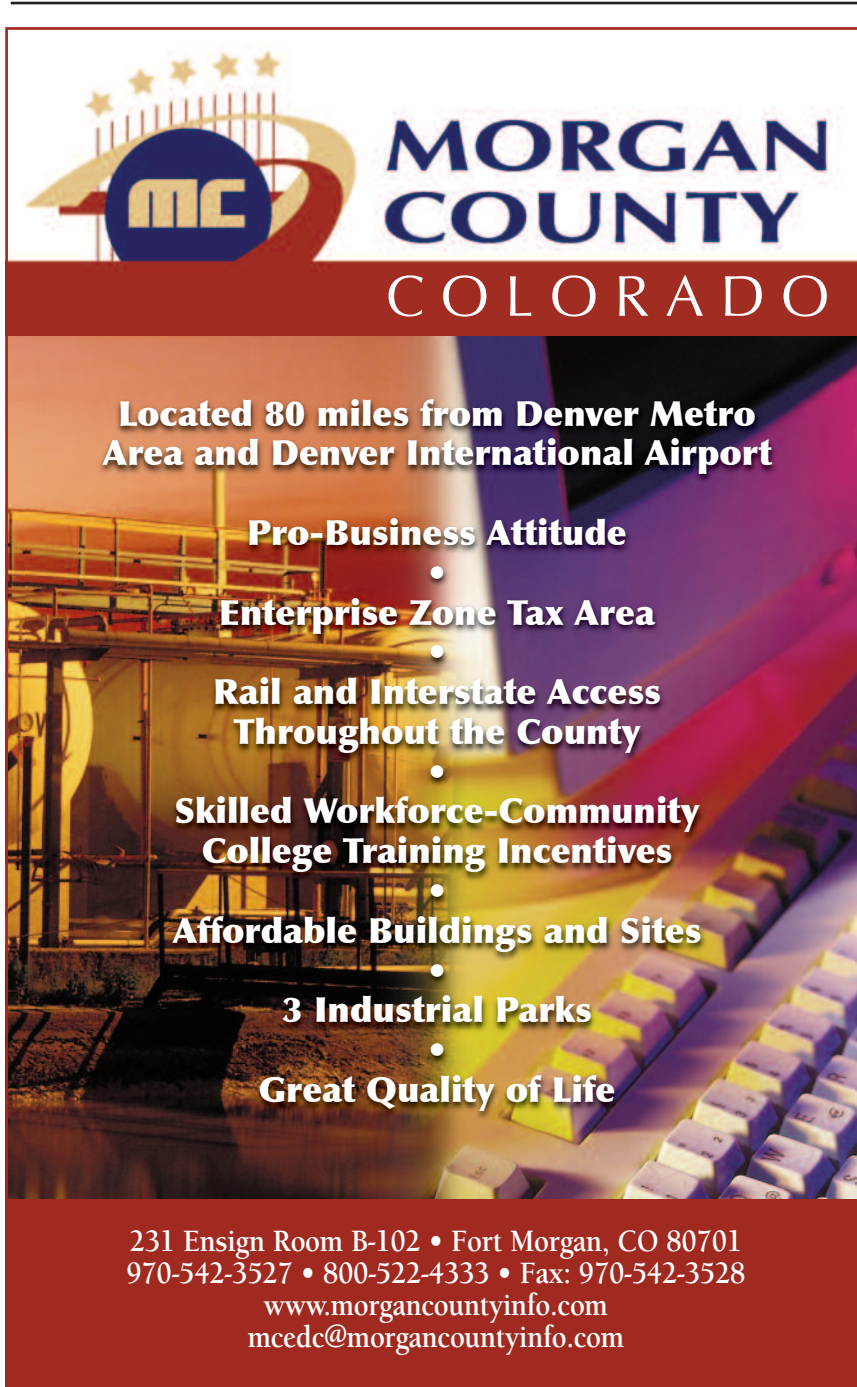
"We provide a wide range of investments that cover the entire bioscience business cycle, from early stage research and development, to commercializing products that come out of that, to attracting and expanding established companies," Bettes says. "We have programs in place to effectively invest our funds along that business spectrum, and we are market driven rather than government driven. We have a business mind set."

The Kansas Bioscience Park is an example of the KBA collaborating with academia, business and government to support biosciences growth and success. The city of Olathe donated 92 acres of prime real estate for the development, which is managed by the KBA. The city and the KBA are working with Kansas State University to create a park where company recruitment and investment, as well as leading-edge research in the biosciences industry can occur in one location.

Kansas State University is building the K-State Olathe Innovation Campus on the site in order to expand its biosciences research capabilities. Fort Dodge Animal Health, a corporate leader in animal health, is expanding at the park, with KBA assistance, creating a \$40 million research and development facility that will employ more than 200 people.

Olathe officials estimate the entire park, which is expected to have all space fully committed by the end of this year, will generate about \$2.4 million in annual tax revenue, \$150 million in capital investment, and 3,000 new jobs with an average salary of \$57,000.

Other areas of the biosciences that Kansas is building upon include drug development and delivery, and

The graphic features the Morgan County Colorado logo at the top left, which includes a stylized 'MC' in a blue circle with a red swoosh and five yellow stars above it. To the right of the logo, the text 'MORGAN COUNTY' is written in a large, bold, blue serif font, and 'COLORADO' is written below it in a smaller, white, all-caps sans-serif font. The background of the graphic is a collage of images: a computer keyboard in the foreground, a factory or industrial building in the middle ground, and a sunset or sunrise sky in the background. The text is overlaid on this background in white and yellow. At the bottom, there is a red banner with white text providing contact information.

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alternative energy activities driven by biosciences such as bioenergy and biofuels. "We have a really strong research corridor between Kansas City and Lawrence," Bettes says. "The universities in this area are doing some tremendous research on human health and pharmaceuticals."

That's one reason why successful biosciences companies outside the United States are establishing North American headquarters in Kansas, Bettes says. Dublin, Ireland-based IndentiGEN began operations in Lawrence earlier this year.

IndentiGEN has created a unique DNA-based system that enables meat producers to verify the quality of meat products and identify their precise origin. IndentiGEN is already doubling its lab space and is expecting to hire a workforce of more than 200 within three years to five years.

Joining IndentiGEN is United Kingdom-based OncImmune, which has selected DeSoto for its U.S. home. OncImmune has developed a blood test that promises a much earlier detection of breast cancer than other means, including mammograms.

With assistance from the KBA, OncImmune is working with the University of Kansas in Lawrence, and the University of Kansas Medical Center in Kansas City, Kan., to expand that technology into detection for other types of cancer.

Midwest Grows Biosciences' Capacities

Wisconsin, the birthplace of stem cell research, is also a powerhouse when it comes to other biosciences research. The state has more than 400 companies involved in biosciences, employing about 27,000 workers, and contributes about \$8 billion to the state's economy.

"One reason for this is our receipt of federal research dollars," says Mickey Judkins, administrator for the division of investment and export, Wisconsin Department of Commerce. "The University of Wisconsin-Madison is No. 2 in terms of receipt of federal research dollars with \$900 million."

Technology-based economic development is a key element of Wisconsin Gov. Jim Doyle's Grow

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Wisconsin initiative. The state has tax credits and grant and loan programs to assist high-potential technology businesses. Wisconsin has also made a \$375 million commitment during the next 10 years to biotechnology in the form of the Wisconsin Institute for Discovery.

"This project will bring together interdisciplinary forces to encourage ideas that support emerging technology companies," Judkins says. "Technology incubators and financing are in place to help capitalize on the resources in the sciences here."

In Marshfield, Wis., the Marshfield Clinic's Laird Center for Medical Research will move one tenant, the Marshfield Clinic Research Foundation's Biomedical Informatics Research Center, into its new facility this summer. The organization will take 8,000 square feet of the 112,000-square-foot facility. During the next year, the organization will add 10 new staff members, from across the country and from the Marshfield region, to study biomedical informatics.

The new Laird Center will bring together clinical lab work and research conducted at the Marshfield Clinic in one facility. In addition to the bioinformatics center, two additional research groups will be located at the center: the Center for Human Genetics; and the Center for Emerging Infectious Diseases.

Last year, Marshfield Clinic officials entered into an agreement with WISys, which is the organization that handles all of the intellectual property for the University of Wisconsin network. The majority of the clinic's intellectual property to date has been in the molecular diagnostics area.

"The advantage for companies of WISys is that they have a single point of contact for intellectual property for all of the University of Wisconsin campuses, one set of agreements, one set of lawyers, so they can integrate technologies more efficiently," says Dr. Justin Starren, director, Marshfield Clinic Foundation's Biomedical Informatics Research Center.

Starren also notes that the Marshfield Clinic features an applied sciences group that works to ensure technologies developed at the clinic make their way into the commercial marketplace; which includes support in the form of internal incubators, and working with companies to license technologies.

Moving southeast in the Midwest United States, Indiana also has a strong biosciences industry sector, where approximately 1,200 companies involved in this sector are located in the state. "The biotechnology industry is a big driver for our state," says Kristin Jones, vice

POCATELLO, IDAHO, POISED FOR MEDICAL R&D

The Pocatello region is home to world-class physicists and scientists, as well as unique assets to support the medical research and development niche of the biosciences sector. The community is home to the Idaho Accelerator Center, which is part of Idaho State University, says Gynii Gilliam, executive director, Bannock Development Corp. "There are only a handful of universities that have an accelerator, such as Stanford and MIT," she says. "It has electron accelerators and linear accelerators — a variety of accelerators."

The center conducts work for the Idaho National Laboratory, a U.S. Department of Energy lab, which is located 45 miles from Pocatello; as well as work for engineering and manufacturing firms.

Gilliam says the Idaho Accelerator Center and the area's economic development officials want to grow the activities that take place at the accelerator. "The accelerator is not as well known as others in the country," Gilliam says. "We want to attract companies that need to use the center, whether it is to produce isotopes for scanning or whether they are conducting materials testing."

Gilliam says the accelerator is located in the community, in part, because the national lab is located nearby, which features a biotech R&D department. An area company, IsoRay Medical, which is based in Washington, will partner with the Idaho National Laboratory to use the

advanced test reactors to produce its product, cesium-131, Gilliam adds. "This is very much a public-private partnership that will make this happen," she says. The isotope company's cesium-131 product is used to treat cancer. The firm has been successful in patient trials and has all of its FDA approvals in place.

Gilliam says that other companies in the area are developing isotopes for activities such as PET scans and MRIs, and will work with the Idaho Accelerator to produce the isotopes they need.

In addition to the accelerator and national lab assets, Idaho State University is designated as a candidate to house the state's new medical school. "Part of the reason we feel the university is a strong candidate is that its pharma school is one of the best in the nation," Gilliam notes. "Our pharma students are placed 18 months before they graduate."

The university also features the 300-acre Idaho State University Business and Research Park, where the Idaho Accelerator Center is located. The park features an existing facility that is well suited to support biosciences firms.

And rounding up the Pocatello area's bioscience medical R&D assets is the Portneuf Medical Center, which is undergoing a \$270 million expansion.

To learn more about Pocatello, visit www.bannockdevelopment.org.

president of business development, Indiana Health Industry Forum (IHIF).

With the assistance of Cushman & Wakefield Global Consulting Group and Bingham Economic Development Advisors, the IHIF is creating a statewide life sciences asset map and strategic planning initiative. The project was launched in February with a survey of businesses involved in the sector. The survey is part of a three-phase initiative to identify, collect data and analysis, and create community strategies and recommendations for attraction, retention and entrepreneurial growth opportunities in the biosciences.

"This will allow us to look at this industry in the state from the ground up and will help Indiana better understand its assets more fully," Jones says. "We will be able to point to specific areas of the state that would be a good fit for specific industry niches."

Statewide strategic recommendations are expected to be issued in June. "We will get a better picture of Indiana than we've ever had before and then we will be able to tell a better story of the life sciences here," Jones says.

Regions and states across the country tell a strong story in regard to their ability to support the biosciences industry's efforts. Building on historical industry strengths, these clusters are well suited to support the industry's needs for growth. ■

Lou Ann Thomas is a freelance writer based in Oskaloosa, Kan. E-mail her at writer@louannthomas.com.

FOR COMPLETE DETAILS ABOUT THE ORGANIZATIONS FEATURED IN THIS ARTICLE, VISIT:

Indiana Health Industry Forum
www.ihif.org

Kansas Bioscience Authority
www.kansasbioauthority.org

Marshfield (Wis.) Clinic's Biomedical Informatics Research Center
www.marshfieldclinic.org/birc

Puerto Rico Industrial Development Corp.
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