



# 2017 Annual Report

We Connect    We Educate    We Invest



# 2017

The impact of the life sciences industry on this state's economy can be measured in billions of dollars because of the impressive number of workers and companies that call Indiana "home". In 2017, three separate billion-dollar transactions reinforced the state's leadership position and underscored the incredible work that is happening here every day.

The year started with a "full circle" story for both the Indiana life sciences industry and BioCrossroads. The deal was a true "Indiana win" in every sense: CoLucid, a promising and novel early-stage pain therapeutic molecule that was spun out of Eli Lilly and Company in 2006, and then successfully commercialized by participating venture capital firms through our very own Indiana Future Fund - the \$73 million venture capital fund-of-funds that BioCrossroads organized in 2003. After 11 years of multi-stage clinical development, Lilly reacquired the company for \$960 million. After CoLucid's "return" home, Indiana now gains a company that opens a promising new area of business activity for Lilly, putting even more Hoosiers to work, adding to the Indiana economy, and poised to bring an important new remedy to relieve the pain for many who suffer from migraine headaches.

Assembly BioSciences, a 5-year old company formed to commercialize technology discovered in Indiana University professor Adam Zlotnick's lab, is advancing a new class of oral therapeutics for the treatment of hepatitis B (HBV) infection and novel oral biotherapeutics for disorders associated with the microbiome of the stomach. Now publicly traded on the NASDAQ, the company moved its headquarters to Carmel, and passed a \$1 billion market capitalization in November. And, the company's licensing deal with Allergan was listed as the second largest biopharma licensing deal in 2017.

Another major life sciences player arrived in Indiana when Catalent, a New Jersey-based drug development and delivery firm, acquired Cook Pharmica in August for \$950 million. Catalent plans to significantly expand the Bloomington facility and hire many additional workers as the company grows in Indiana—a state that has been a leader in biologics drug manufacturing since Eli Lilly and Company acquired and produced some of the very first biologic medicines for the treatment of diabetes in the early 1980s.

These are not only big deals for Indiana, but represent major transactions anywhere in the world. They also serve as ready confirmation that when it comes to the life sciences industry, Indiana indeed remains a “Tier I” state.

Other significant events this year included:

- Orthopediatrics, an orthopedics company developing products for the pediatric market, went public, one of only two IPOs in Indiana this year—with a current market capitalization of \$250 million.
- Cook Medical Group announced an expansion in Bloomington, with plans to add 500 jobs over the next 10 years.
- On Target Laboratories, which is developing small molecules to detect cancer and diseased tissue, raised \$40 million in venture capital.
- A new biotech startup, LifeOmic, founded by the legendary tech entrepreneur Don Brown (founder of Software Artistry and Interactive Intelligence, and also a graduate of the Indiana University School of Medicine) is advancing the development of precision medicine through cloud and digital platforms. LifeOmic is also investing \$16 million to house its headquarters in Indianapolis and add 225 employees near the IU School of Medicine campus.

2017 was also a remarkable year for BioCrossroads, as it celebrated its 15<sup>th</sup> anniversary. BioCrossroads was created in 2002 to serve as a catalyst for the development of the region’s substantial life sciences industry and intellectual property assets. BioCrossroads’ history has been a productive one, designing and developing unique collaborations; cataloguing and branding our life sciences sector and marketing its

state  
\$78B  
economic impact



highest  
2<sup>nd</sup>  
in the U.S.  
\$8.2B  
life sciences exports



**\$94,749**  
wages per person



**\$5.3B**  
total industry wages

significant strengths; igniting a long-overdue venture capital market through the establishment of a series of successful seed and early-stage venture funds; advancing science, technology, engineering and math (STEM) education and public awareness; and working with academic and industry partners to help accelerate the movement of research from laboratory to the patient.

To tell the story of BioCrossroads' success, it released a report highlighting seven distinct programs developed with the support of local life sciences leaders and other partners who saw the market opportunity for these enterprises, including OrthoWorx, IndyHub, Indiana Biosciences Research Institute, Datalys Center, Indiana Seed Funds, Indiana Health Information Exchange and AgriNovus Indiana. As was the case when it started 15 years ago, collaboration remains at the heart of what BioCrossroads does today.

And from an economic standpoint, Indiana's vibrant life sciences sector continues to grow and is now at \$78 billion.<sup>1</sup>

### **Magnifying Market Knowledge**

Promoting our mission to educate and spread the word about the life sciences industry, BioCrossroads maintained an active events calendar, launched a new life sciences news website and commissioned new reports in 2017, as it sought to widen knowledge of our life sciences industry and opportunities to new audiences.

To promote industry and academic life sciences activity, BioCrossroads launched [www.biospeakindiana.com](http://www.biospeakindiana.com) in the summer of 2017. The website is a hub for Indiana life sciences company and research news and event announcements.

In September, TEconomy Partners (formerly Battelle Technology Partnership Practice) published a report on the *Importance of Indiana's Research Universities*, which detailed four major engagement contributions of Indiana University, Purdue University and the University of Notre Dame: knowledge expansion



At the Summit itself, thought leaders from around the world spoke on the topics of digital health, global health and the capital markets. The two-day event was capped by a riveting keynote presentation by Ken Payie, Ph.D., president of Mapp Therapeutics, telling the story of Mapp’s successful development of the antibody treatment to combat the Ebola virus.

As is tradition at the Summit, BioCrossroads named the 2017 recipient of the August M. Watanabe Life Sciences Champion of the Year Award. Marion County Public Health Department Director Virginia A. Caine, M.D., was honored for her many roles in the community, including serving as an ardent voice for public health and access to medical care for the disadvantaged and encouraging policy that will better healthcare. She is also an Associate Professor of Medicine for the Infectious Disease division of the Indiana University School of Medicine.

BioCrossroads organized and hosted six educational Frameworkx events with partners, including Roche Diagnostics, Eli Lilly and Company and the Carlyle Group, and expanded the series to include scientific-specific content in partnership with the Indiana Biosciences Research Institute. Topics included:

- Single Cell Technology and Metabolic Disease
- Indiana Public and Population Health Issues
- Innovative Technologies and Diagnostics
- Life Sciences Capital Market Successes
- The Impact of Indiana’s Research Universities
- CoLucid – A Spin Up, Spin Out and Spin Back In Story

and innovation; economic development; the enhanced capabilities of human capital; and societal well-being and quality of life.

TEconomy’s research showed that Indiana’s three major research institutions have a powerful impact on the state with a combined 1.44 million living alumni, \$1.3 billion in annual research expenditures in 2015 and programs that touch all 92 counties. All three of these universities are recognized among the top 150 best research institutions in the world<sup>2</sup> and boast alumni and faculty that include 73 National Academies Members, 20 Nobel Prize winners and three World Food Prize recipients.

October marked a successful 14<sup>th</sup> Indiana Life Sciences Summit and Scientific Session with more than 300 attendees at three different programs. The Scientific Session doubled in size with a full day of lectures and twice as many attendees as in 2016. The poster session drew in 16 presenters ranging from high school students to Ph.D.s, representing both academia and industry organizations, as well as U.S. and international participants.



**80** new products approved by the FDA



## Stimulating Start-Ups

BioCrossroads kicked off 2017 with an Indiana Seed Fund II investment in Allinaire Therapeutics, working in conjunction with BioMotiv, a biomedical accelerator affiliated with the Harrington Project for Discovery & Development; and Indiana University's Innovate Indiana Fund. The funding will help the company advance the development of therapeutics for the treatment of chronic obstructive pulmonary disorder and other respiratory disorders, including acute lung injury.

In its fifth year, BioCrossroads' New Venture Business Competition continued to draw out promising life sciences start-ups from university research as well as independent entrepreneurs. Purdue's LoDos Theranostics, a start-up developing ultraviolet light technology for making cancer treatment with radiation therapy safer and more effective, was named the winner of the competition and earned a \$25,000 prize. A technology from Indiana University School of Medicine won second place: Indiana Lysis Technologies is a product-based discovery company with core-competency in nanoparticle drug delivery technology. And Jeffersonville-based Inscope Medical Solutions, focused on developing low cost, disposable, connected medical devices took third place honors.

## Catalyzing Collaborations

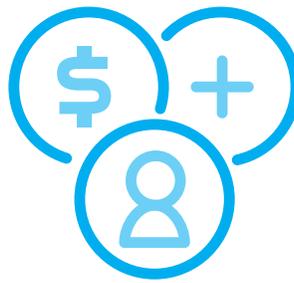
In October, BioCrossroads received a two-year \$2.9 million grant from Lilly Endowment Inc. to advance and develop new phases of our scientific, educational and charitable mission. Through such significant philanthropic support, BioCrossroads continues to build on the foundation and spirit of collaboration, bringing together industry, academia and philanthropic partners. In 2017, the BioCrossroads team embarked on new phases of important work with the Indiana Biosciences Research Institute, the Indiana Clinical and



**\$11M**  
venture capital  
funding



**33**  
start-up  
companies



## Wages

**\$94,749 wages** per person in life sciences;  
\$44,750 per person in private sector

Translational Sciences Institute (at the IU School of Medicine), 16 Tech Innovation District and STEM programs for Indiana's K-12 teachers and students – all efforts which advance talent and innovation.

BioCrossroads' success in establishing and driving such intentional partnerships has been extensively noted in the new book, *The New Localism - How Cities Can Thrive in the Age of Populism*, by Brookings Institution's Centennial Scholar Bruce Katz and Senior Fellow Jeremy Nowak. The book tells the stories of global cities on the vanguard of progress at a time of growing global complexity and change. Along with Pittsburgh and Copenhagen, Indianapolis is singled out as a world leader for strategic approaches and sustained solutions to the challenges of growth.

The book highlights Indianapolis as a city that was thinking ahead of its time almost 20 years ago with the establishment of effective governance mechanisms such as the Central Indiana Corporate Partnership (CICP) to combine effective community leadership, data and strategy, and funding to provide a winning "structure to the practice of collaboration". As a leading example, Katz and Nowak detail how BioCrossroads, as CICP's oldest sector initiative, has been successful establishing a venture capital ecosystem, market-driven enterprises, and industry, academia and philanthropic collaborations, and in the process, accomplishing what the book calls "perfecting a culture of collaborative action".

## Board of Directors

2017 BioCrossroads Board of Directors members represent the state's industry, academic and government sectors. The senior leaders on the Board are essential to BioCrossroads' success, and they are united in their common commitment to find even more ways to collaborate, sustain investments and build upon the energy and assets Indiana already has.

**Darren J. Carroll**, Senior Vice President, Corporate Business Development at Eli Lilly and Company, is the Chairman of the Board of BioCrossroads.

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*Retired Dean*  
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300 N. Meridian St., Suite 950  
Indianapolis, IN 46204  
317-238-2450

[www.biocrossroads.com](http://www.biocrossroads.com) | [www.biointellex.com](http://www.biointellex.com)

<sup>1</sup> 2016 data from the Indiana Business Research Center (IBRC).

<sup>2</sup> The Times "World University Rankings".

Data used in graphics are the most recent available, and were compiled by the Indiana Business Research Center at the Indiana University Kelley School of Business and BioCrossroads.