

BOARD OF DIRECTORS

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.

Daniel Peterson is the Chairman of the Board of BioCrossroads.

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University of Notre Dame*

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*Distinguished Professor of Chemistry and
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BioCrossroads®

2019 ANNUAL REPORT



A letter from the President & CEO

Although I'm new to the role of president and CEO at BioCrossroads, I have been passionate about the life sciences and Indiana for my entire career. Serving the life sciences community in this position for the last six months of 2019 has both further inspired that passion and also challenged me to continue to promote and grow this critical sector for both the health of patients around the world as well as the economic health of Indiana.

I am inspired and energized by an organization that gets things done, including spreading the word about the sector via our Frameworx and Indiana Life Sciences Summit platforms; launching three exciting initiatives: INscience news app, the DataX Bio-Innovation Challenge and the AXIS Mentoring program; investing in six startup companies through Indiana Seed Fund III; and fostering cross-organizational innovation throughout the life sciences community. And, a new report on our research universities capabilities and industry needs for advanced analytics and artificial intelligence from TEconomy provides not only an overview of what's happening, but also includes recommendations to support and catalyze new ways in which our universities and corporations can work together.

Indiana's life sciences sector continues to thrive with several notable 2019 developments in our

research universities, our start-ups and our companies.

- ▶ Indiana University School of Medicine and Purdue University received \$36M from the National Institutes of Health (NIH) to launch a drug discovery center to accelerate the development of an Alzheimer's disease treatment.
- ▶ The University of Notre Dame received \$33M grant from the World Health Organization for malaria research.
- ▶ Millions of dollars of investments in artificial intelligence and advanced analytics programs and facilities were committed to Indiana's three research universities.
- ▶ Eli Lilly acquired Loxo Oncology for \$8B; invested \$400M in its manufacturing facilities in Indianapolis; and committed to 100 new jobs.
- ▶ Sexton Biotechnologies spun-out of Cook Regentec and subsequently raised \$5M in venture capital.
- ▶ Elanco started the process of a \$7.6B acquisition of Bayer Animal Health.
- ▶ New-to-Indiana Arizona Isotopes Research Corp is bringing an R&D hub to Bunker Hill and 40 new jobs to Indiana.
- ▶ Abbott Vascular is establishing operations in Westfield with 450 jobs.
- ▶ LifeNet committed an additional 100 jobs; Covance committed 200 new positions.
- ▶ Catalent announced they are increasing their headcount by 200 employees and investing \$100M in their Bloomington facility.

These are only some of the dozens of examples of the incredible work that is going on all over Indiana. And as the life sciences industry evolves at an unprecedented rate, I am ready for the challenges we face as a community, a sector and a state.

I'm honored to lead this organization and to continue its 17-year legacy of advancing the life sciences in the state by bringing together industry, academia and philanthropy in new and collaborative ways. Indiana has a rich life sciences history and an exciting future. It is my honor to advance the mission of BioCrossroads and ensure everyone is aware of the life-changing and life-saving work that is happening here.



A handwritten signature in black ink that reads "Patty Martin".

Patty Martin
President & CEO
BioCrossroads

Indiana's life sciences industry keeps evolving, expanding, and making new discoveries. In 2019, companies made acquisitions and invested in their local operations; new organizations opened facilities in Indiana, bringing innovation and hundreds of new jobs to the landscape; and start-ups received venture funding to move their products forward. The result is a vibrant and growing Indiana life sciences sector. Now 2,157* companies and 56,575* people strong (increases over previous years), the state continues to rank as one of the five most concentrated life sciences states in the United States. For the ninth straight year, Indiana is ranked

as the **second highest exporter of life sciences products in the U.S.***

In its 17th year, BioCrossroads also experienced dynamic activity – with new leadership, several groundbreaking projects and programs, and a report that will help guide the future of our advanced analytics and artificial intelligence assets. Life sciences and community leader Patty Martin joined as the president and CEO in July. Her expertise, drive and passion for life sciences and the impact it has on people and the community, particularly on Indiana is advancing the mission of BioCrossroads.

MARKET KNOWLEDGE AND EDUCATION

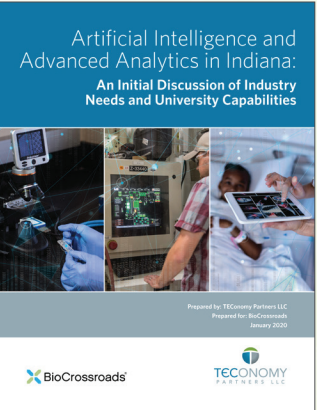
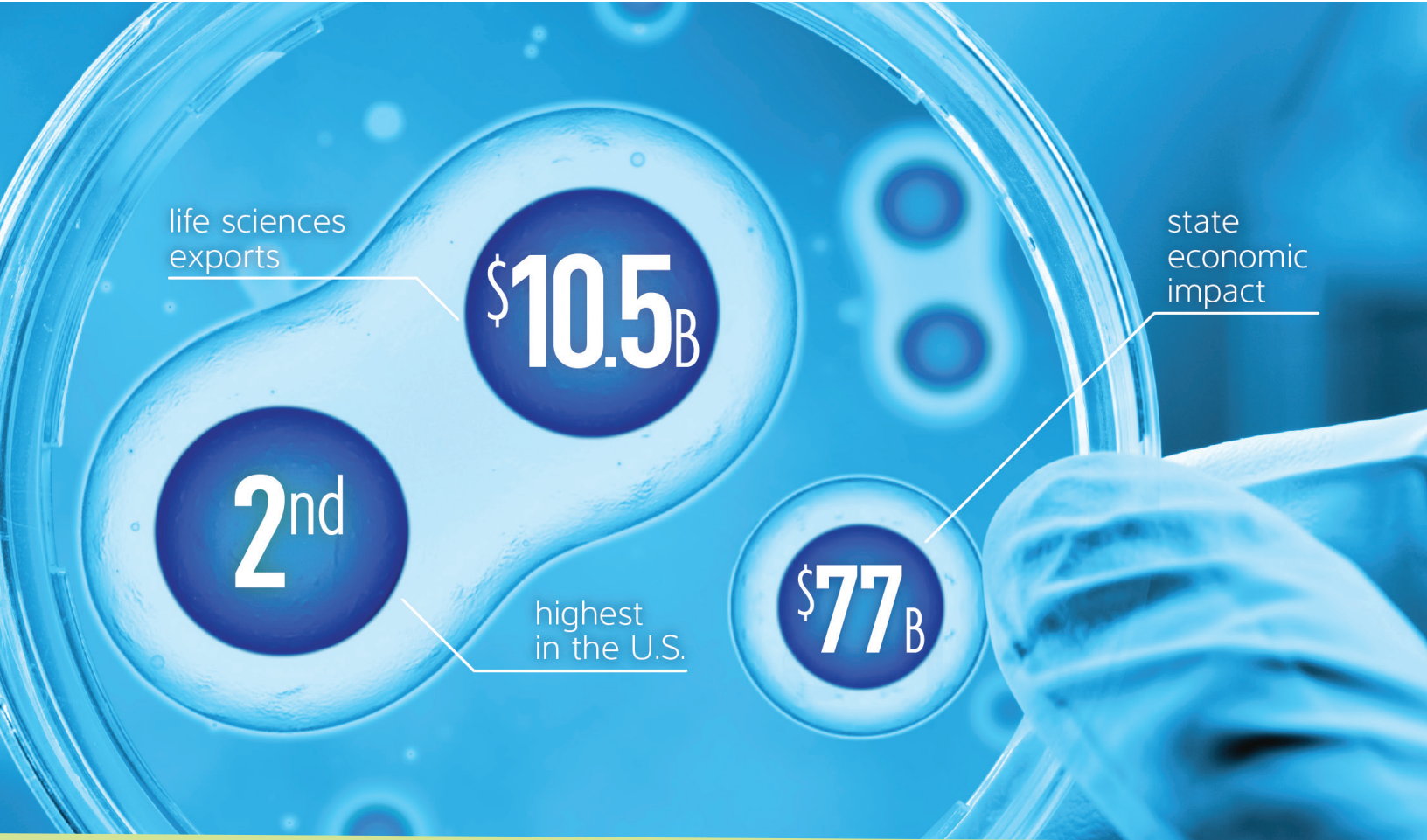
Just as life sciences companies have a process for discovery, research and development, and market commercialization for their products, one of the hallmarks of BioCrossroads is doing research and gathering market knowledge to uncover opportunities that lead to collaborations and innovation.

an unprecedented pace and is driving significant investments by Indiana's industry partners and research universities to ensure that they stay ahead of the curve.

While there is limited coordination between industry and academia in Indiana in these areas, Indiana

“Data is the new language. We must take a more intentional approach to promote engagement in advanced analytics between our industry and our research universities.”

– Patty Martin, President and CEO, BioCrossroads



One example was in the organization's goal to better understand Indiana's opportunities and capabilities in advanced analytics and artificial intelligence both in life sciences and other advanced industries companies. Through the report, *Artificial Intelligence and Advanced Analytics in Indiana: An Initial Discussion of Industry Needs and University Capabilities*, TEconomy Partners revealed that technological change is affecting our economy at

University, Purdue University and the University of Notre Dame all have tremendous capabilities, investments and programs related to advanced analytics. Each has made significant investments to grow foundational data sciences and applied analytics capabilities that support talent pipelines and the development of applied analytical skills. The report provides specific recommendations for more intentional engagements between industry and Indiana's research universities.

"Indiana's life sciences industry continues to grow and to maintain national significance across key indicators of success: employment, average wages, and exports."

– Brian Stemme, Senior Vice President, External Engagement, BioCrossroads

WORK IN Workforce & Wages

2,157 companies are working in the areas of drugs and pharmaceuticals, medical devices and equipment, agricultural chemicals and feedstock, medical, research and testing laboratories and biologics. In 2019, Indiana companies committed to invest more than **\$800 million** in new facilities and equipment.

2,157
companies

>56k
employed

\$5.8B
total industry
wages

>\$102k
average wage
per person



Average wage per person in life sciences is **>2x** the average wage per person in the private sector.

CATALYZING & COLLABORATING

BioCrossroads collaborates and catalyzes life sciences activities for the state of Indiana in new and exciting ways. Three programs highlighted that mission in 2019.



BioCrossroads, 16 Tech and the Indiana Biosciences Research Institute, together with the innovation offices of Indiana University, Purdue University and the University of Notre Dame, launched a new program to add more power to the entrepreneurial environment. Accelerating Innovation IN Science, or AXIS, pairs experienced mentors with rising stars to support and grow the life sciences ecosystem by cultivating serial entrepreneurs and driving innovation forward.

AXIS is based on the successful model from the Massachusetts Institute of Technology's Venture Mentoring Service (MIT VMS). Earlier this year, the core founding partners of AXIS trained at MIT VMS to bring their approach to Indiana.

First Cohort

23 mentors

8 mentees

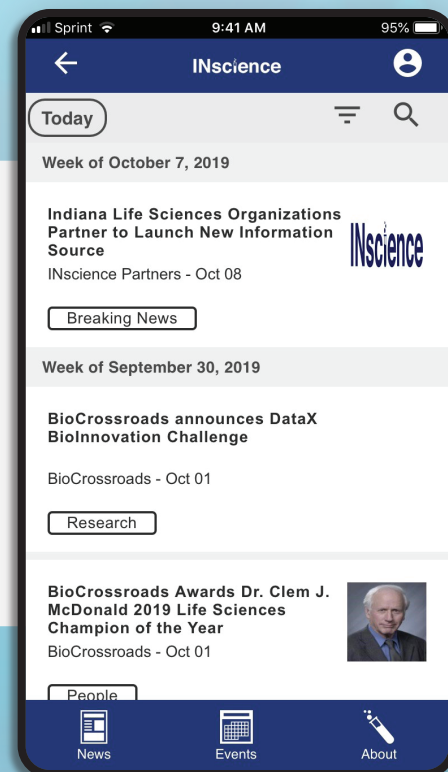
AXIS mentors have significant industry, startup and academic institution knowledge and are providing tailored, experienced, objective guidance and insights to entrepreneurs. The mentors and mentees meet every four to six weeks to focus on immediate challenges the mentee is facing to brainstorm solutions by leveraging the deep and broad experiences of the team.

INscience

In another unique collaboration, seven life sciences organizations, led by BioCrossroads, came together to find new ways to spread the word about Indiana's diverse life sciences ecosystem. Together with Cook Regentec, Corteva Agriscience, Eli Lilly and Company, Indiana Biosciences Research Institute, Indiana Clinical and Translational Sciences Institute and Roche Diagnostics, they launched INscience, a free app that delivers breaking news, career opportunities, videos and community engagement events, to encourage local engagement and knowledge about Indiana's life sciences community.



INDIANA
BIOSCIENCES
RESEARCH
INSTITUTE



"The INscience platform is a great way to connect and create new conversations at the organizational and individual levels, enhance the diversity of community engagement, and learn about networking opportunities."

– Vanessa Barth, Lilly Loaned Executive and Chief Scientific Officer, BioCrossroads



Bio-Innovation Challenge 2019

As a way to foster artificial intelligence and machine learning as key tools to realizing new discoveries in the life sciences, BioCrossroads developed a new competition where innovators have access to data sets to identify and investigate a hypothesis aimed at improving two Indiana health issues – diabetes and opioid abuse. The BioCrossroads DataX Bio-Innovation Challenge was created to intersect life sciences and data research and encourage new ways of investigating traditional disease biology and public health outcomes' questions.

"DataX seeks to spark new innovation at the crossroads between data/analytics and life sciences."

– Darshan Shah, Chief Data Officer, BioCrossroads

The Indiana Biosciences Research Institute and Regenstrief Institute provided data sets for the competition.

The Challenge was launched during the 2019 Indiana Life Sciences Summit with applications due in January 2020 and final judging in March 2020.

INNOVATION IN



71

new products
approved by
the FDA



\$177M

venture
capital
funding



37

companies
funded

**Includes Inari Agriculture's \$89 million venture capital round. Inari was founded in Cambridge, MA, and has a majority of its current operations in Indiana.

INDIANA SEED FUND III

BioCrossroads' Indiana Seed Funds have invested in 30 companies since 2005 and those companies have gone on to raise more than one-half billion dollars.

2019 Indiana Seed Fund III investments included: Sabanto, Gate Neurosciences, Lumavate, Brickell Biotech, MBX Biosciences, and Sexton Biotechnologies.

"Innovation is critical for Indiana's life sciences and our start-ups are an essential component of our ecosystem. BioCrossroads' Indiana Seed Funds are providing the fuel that allows talent to get their breakthrough science to the next level."

– Nora Doherty, Executive Vice President, Finance and Indiana Seed Fund Managing Director, BioCrossroads



AgTech



Therapeutic



SPREADING THE WORD

For more than sixteen years, BioCrossroads has been convening life sciences influencers for networking and educational content on relevant and timely topics. The 2019 Indiana Life Sciences Summit content focused on the impact of artificial intelligence in the life sciences. For the scientific session, neuroscience research in Indiana was the topic. The event attracted record crowds and featured noteworthy speakers on artificial intelligence, data analytics and research in neuroscience and Alzheimer's Disease.



"Frameworkx and Summit not only bring people together to learn about new trends and scientific breakthroughs, but they're also valuable collision spots for attendees. We know of several transactions and collaborations that have resulted from a chat at a BioCrossroads event."

– Lori LeRoy, Executive Vice President, Communications, BioCrossroads

During the conference, Dr. Clem McDonald, the "father of the electronic medical record" and Chief Health Data Standards Officer, National Library of Medicine, National Institutes of Health, was awarded the Watanabe Life Sciences Champion Award for his unprecedented impact on health IT and digital health in Indiana and abroad.

The Frameworkx series included six events covering the topics of entrepreneurship stemming from university research, regenerative medicine, mentoring, diabetes research, public health, and the next generation of pharmaceutical companies.

BioCrossroads **\$2.9M** grant received a **Lilly Endowment Inc.** to support university engagement, tech and biotech convergence, cross-sector collaboration, support of existing programs and activities.

