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**Indiana Health
Industry Forum**

Critical Mass 2005

*Building on the success of
Indiana's Health Industry*



The Indiana Health Industry Forum, Inc. (IHIF) is a not-for-profit, private sector initiative, devoted wholly to enhancing the economic growth and development of the health industry in Indiana. IHIF is a public/private alliance of manufacturers and suppliers, educational institutions, healthcare providers, service providers, and government dedicated to one purpose: To make Indiana a premier state for the creation and growth of health industry enterprises.

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Welcome to *Critical Mass 2005*

Dear Reader:

Indiana truly represents both an established and dynamic market for the health industry. This Indiana Health Industry Forum (IHIF) report on the economic impact of the industry offers a telling story of how this industry is a major factor in the overall prosperity of Indiana.

In my more than twenty years of participating in various aspects of the Indiana business economy, I have observed first-hand the diversified economic base and highly-skilled workforce the state offers. The economic importance of the state's life science and health care industry cluster and the relative strength of Indiana on the national and international level are clearly confirmed by this report.

This strength resonates not only in the numbers the study confirms, but also in actuality. For example, I had the privilege of speaking at the 2004 IHIF annual meeting which provided me first-hand evidence of the strength, commitment and diversity of Indiana's endeavors and accomplishments in the health industry. My lasting impression of that event is that Indiana's long-established core of pharmaceutical, medical device and healthcare providers offers an ideal community for necessary interaction with the financing and investing community, biotech entrepreneurs, academic centers, and service organizations to grow and further develop a strong health industry.

Indiana's health industry activities have been embraced by community, academic, civic and corporate leaders to provide an environment that grows on the strength of the interactions of these players in the health care community. This is a real differentiator from other markets and an environment that will allow participants to take advantage of emerging thinking and technology in the years to come providing strong economic growth opportunities for Indiana.

Congratulations to IHIF and the people of Indiana on an exciting report!

Sincerely,

John D. Rhodes
U.S. & Global Managing Partner, Life Sciences
Deloitte & Touche LLP

Dear Reader:

Welcome to the Indiana Health Industry Forum's *Critical Mass 2005* report. The previous version of this report was issued in 2002 and much progress has been made since then — companies have formed, new initiatives have been set into motion and the health industry is an even bigger and more vibrant part of Indiana's economy.

This report confirms our suspicions — the impact of Indiana's health industry is enormous. For example, we found that 274,000 people are directly employed by the health industry. In total, more than 578,000 Indiana jobs are directly or indirectly tied to the health industry and account for more than \$21 billion in wages and \$2.5 billion in state taxes paid — just over 20 percent of Indiana's tax base. Ultimately, 18 percent, or \$69 billion, of Indiana's economic output is tied to the health industry. It's safe to say the health industry is inextricably linked to our present and future economic health.

Today, Indiana has a wealth of well-established, and growing, market-leading health industry firms that are supported by a host of companies and organizations that cater specifically to pharmaceutical, medical device and healthcare delivery businesses — leveraging local knowledge and accessing global markets.

The path to the continued growth of Indiana's health industry lies not just in strengthening or creating pharmaceutical, medical device and healthcare delivery companies, but also lies in capitalizing on continued growth in the supply chain that supports those sectors. Advanced manufacturing, logistics and information technology initiatives intersect with the life sciences very clearly throughout the industry's value chain.

I hope you find *Critical Mass 2005* informative, interesting and ultimately inspiring as Indiana's health industry becomes an even more critical driver for Indiana's economic growth. I would like to extend our sincere thanks to our partners in this process. Thirteen economic development organizations listed in this report and the State of Indiana helped support this project and have begun the journey of capitalizing upon their local assets and growth trends in the global health industry.

Sincerely,

Wade Lange
President and CEO
Indiana Health Industry Forum

Overview

In an increasingly competitive global market it is imperative for state and regional economies to find their economic niche, exploit their resources and make sure the world knows they're on the map. Anything less is an invitation for competitors to move in — or for companies to take their business elsewhere. Indiana has clearly received that message. The state has aggressively staked its claim in the health industry and taken bold steps to build upon one of the nation's most concentrated biopharmaceutical clusters. In addition, Indiana is home to some of the country's top life science research universities. These universities provide a training ground for future employees and development of new intellectual property that can be converted into novel technologies, new products or companies.

In fact, the health industry has made an indelible — and positive — impression on Indiana's economy. The health industry, directly and indirectly, now accounts for \$2.48 billion — 20.18 percent — of Indiana's total state taxes and another \$5.5 billion of federal taxes paid in 2003. The health industry directly accounts for 274,109 jobs — 9.06 percent of all jobs in Indiana — which earned direct compensation of more than \$13 billion, or 11.18 percent of all compensation in Indiana. Furthermore, wages paid to Indiana's health industry workforce have remained consistently higher than Indiana's overall wage average.

Critical Mass 2005 identifies, defines and categorizes Indiana's assets in the health sector. This report encompasses a descriptive overview of the configuration and deployment of the health industry and includes an examination of the economic impact of this driver of Indiana's economy. For the purposes of this document, the term "health industry" can be

The health industry, directly and indirectly, now accounts for \$2.48 billion — 20.18 percent — of Indiana's total state taxes and another \$5.5 billion of federal taxes paid in 2003.

defined as biopharmaceuticals, medical devices and instruments, healthcare delivery, laboratories and payors. It is important that to understand the full economic impact of the health industry, one cannot focus solely on the core of the industry. A full understanding requires an examination of the many supporting sectors of the health industry as well, including the vital role of Indiana's research institutions. Companies that operate in the health industry value chain are often not under-

stood to be part of the health industry, yet their core business both contributes to and gains from the growth of the state, national and global pharmaceutical, medical device and healthcare sectors. This report provides a comprehensive view of the health industry and its overall impact on Indiana's economy.

As most industries do, Indiana's health industry has grown from a smattering of geographically disconnected companies to a series of full-fledged clusters — critical masses of related resources that feed on themselves and propagate independently. Nearly every successful economy has sprung from a cluster of economic growth in which business begets more business. Cluster models emphasize a region's unique qualities and are seldom bound by typical industry classifications. Studying the Indiana Health Industry Cluster Model (Figure 1) is particularly useful in grasping the full economic impact of health industry firms on the regional economy. The full impact is analyzed by examining the relationship of each firm by its interaction, complements, and supporting roles within the industry. This analysis provides an accurate examination of favorable conditions for cultivation and expansion of targeted sectors within the health industry. The model is broken down into four outlying clusters: Suppliers, Customers, Support Organizations, and Support Services, with the core representing the heart of Indiana's health industry.

Indiana Health Industry Cluster Model

Building a successful industry cluster often depends on an existing cache of core companies to serve as a beacon for other firms and a catalyst for industry growth — from suppliers and contract researchers to business incubators and professional service firms.

In fact, that's exactly what's happened in Indiana. DePuy Orthopaedics was at the forefront of the medical device sector in northern Indiana while Indianapolis-based Eli Lilly and Company has become one of the world's renowned pharmaceutical companies. As core companies like Lilly and DePuy have driven demand for suppliers, the supply clusters around them have grown.

As the core biopharmaceutical, medical device companies and healthcare delivery institutions continue their efforts to become more nimble organizations to successfully compete, continued growth of outsourcing is expected. Experts have commented that this industry is becoming much more like the automotive industry in its use of strategic suppliers. To support this point, the Biotechnology Industry Organization's (BIO) data tells

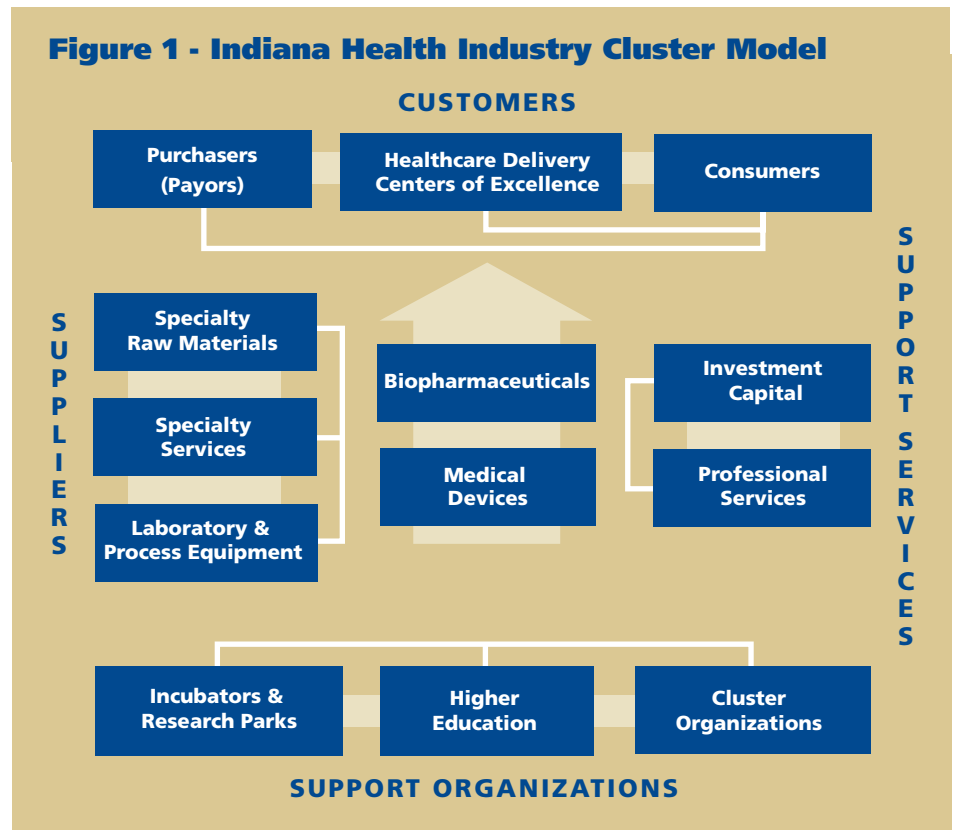
us that over 80 percent of the cost of goods for emerging biotechnology companies is currently outsourced; in the more mature medical device industry 42 percent of the cost of goods is outsourced to strategic suppliers.

According to the June 2002 issue of *Medical Device & Diagnostic Industry* magazine, the number of projects outsourced to suppliers by the medical device

industry increased more than 18 percent between 1999 and 2000 with a predicted annual growth rate of more than 17 percent through 2005. At the same time, contract manufacturers report that their business is growing at a rate of between 10 and 20 percent annually.

Nationally, pharmaceutical companies are also expecting significant outsourcing growth.

Figure 1 - Indiana Health Industry Cluster Model



For example, 62 percent of all pharmaceutical firms are predicting at least 10 percent growth in 2005 in areas like analytical chemistry and microbiology, solid and injectable dose and clinical trial material manufacturing, according to *Pharmaceutical Technology's* "Outsourcing Resources 2004" report. Clearly, supplier and sub sector growth is on the rise, perpetuating Indiana's already vibrant health industry cluster.

Covance, today one of the largest and most comprehensive drug develop-

ment services companies, launched (as SciCor) its central laboratory division in 1986 with Lilly as its first and only client. Today, Covance serves the global pharmaceutical industry and utilizes its own crop of local suppliers as the cluster building cycle continues. In addition, former SciCor/Covance executives have become successful local health industry entrepreneurs.

While it's easy to say that business leads to new business when it comes to the cluster model of economic growth, the

supply chain that has grown up around Indiana's health industry cluster is not always obvious. Suppliers provide specialty raw materials, specialty services, and laboratory and process equipment designed specifically for use by companies that operate in the health industry (Figure 2).

Experience shows Indiana's traditional manufacturing base has plenty to offer the pharmaceutical and medical device industries. There are many instances of companies that manufacture plastics or

Figure 2 - Indiana Health Industry Cluster Model: Suppliers

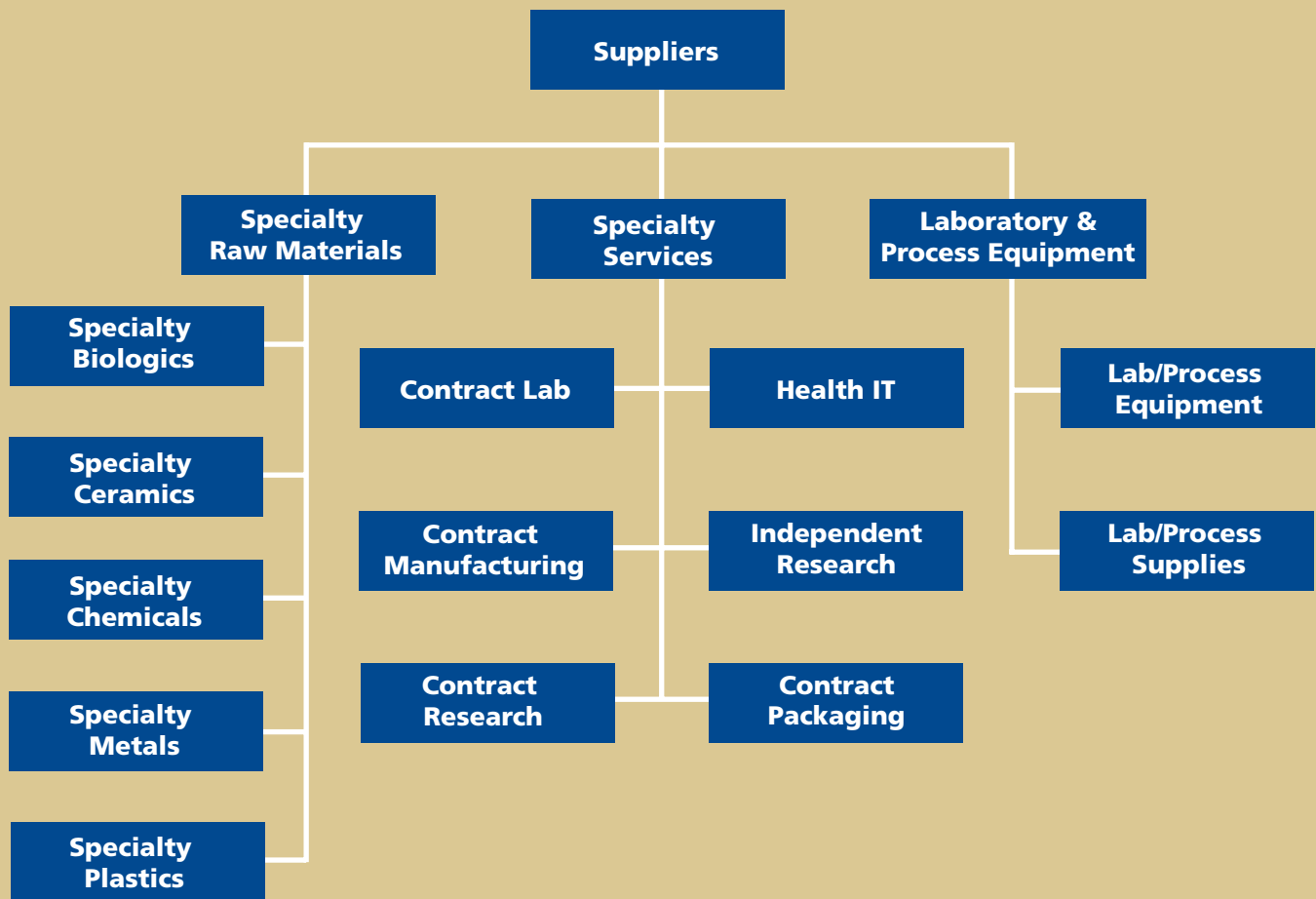
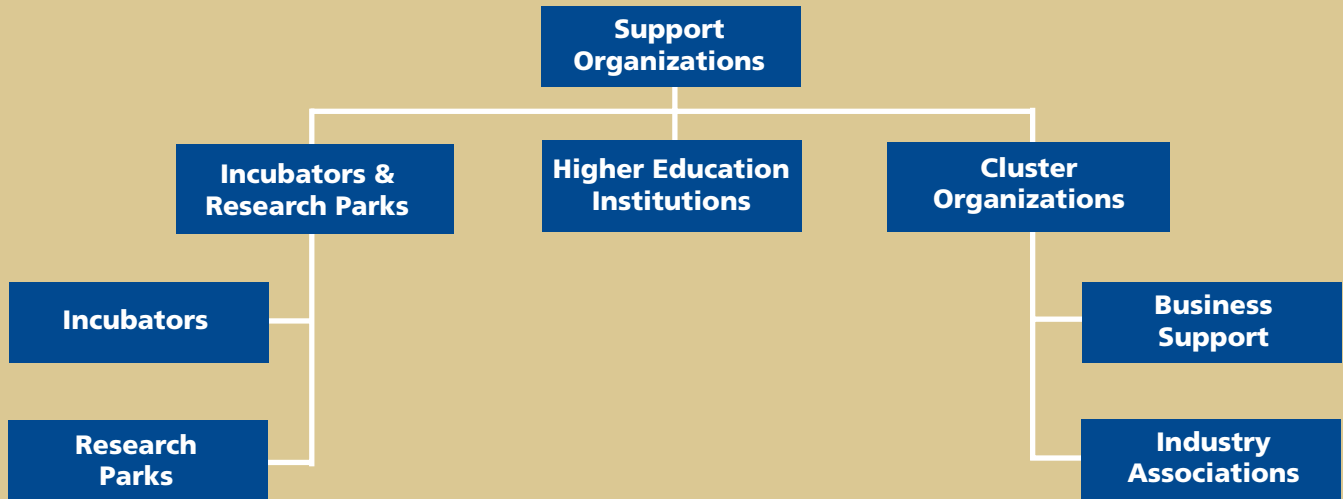


Figure 3 - Indiana Health Industry Cluster Model: Support Organizations



metals, for example, that have grown by adapting their products and services for pharmaceutical and medical device companies (see sidebar on page 10).

Today, Indiana’s core health industry firms are often able to manufacture their products or provide their services in partnership with regional firms to supply national and global markets. For example, Indianapolis-based Suros Surgical Systems acquires more than 80 percent of the necessary components for its ATEC® (Automated Tissue Excision and Collection) devices from Indiana suppliers. That’s an approach that bodes well for established firms and industry entrepreneurs alike, who would rarely be able to build a completely integrated

company with all of the necessary pieces in-house (see sidebar on page 12).

For emerging businesses, the level of support from Indiana’s growing number of business incubators, research parks, industry associations and university technology transfer offices is expanding (Figure 3). Companies of all stages can find the support they need from a growing number of organizations that offer assistance in everything from product development to accounting.

Serving as fuel for the state’s cluster of newly forming health and life science startups, Indiana’s universities have become hotbeds of new technology waiting to be transferred and commercial-

ized. Purdue University’s Research Park, which serves as the school’s technology transfer vehicle, was recently named as the number one research park in the country by the Association of University Research Parks. Indiana’s universities are increasingly focused on leveraging their intellectual assets to spin out new companies, further bolstering the state’s health industry cluster.

“There’s a tremendous amount of investment being made in the state’s incubators and research parks,” said Mark Long, president of the Indiana University Emerging Technologies Center. “When you’re a startup in an incubator, there is an incredible amount of support. By the same token, if an existing firm

is recruited to pull up stakes and move to Indiana, you've got a built-in scientific and business community here that's ready and willing to help you grow."

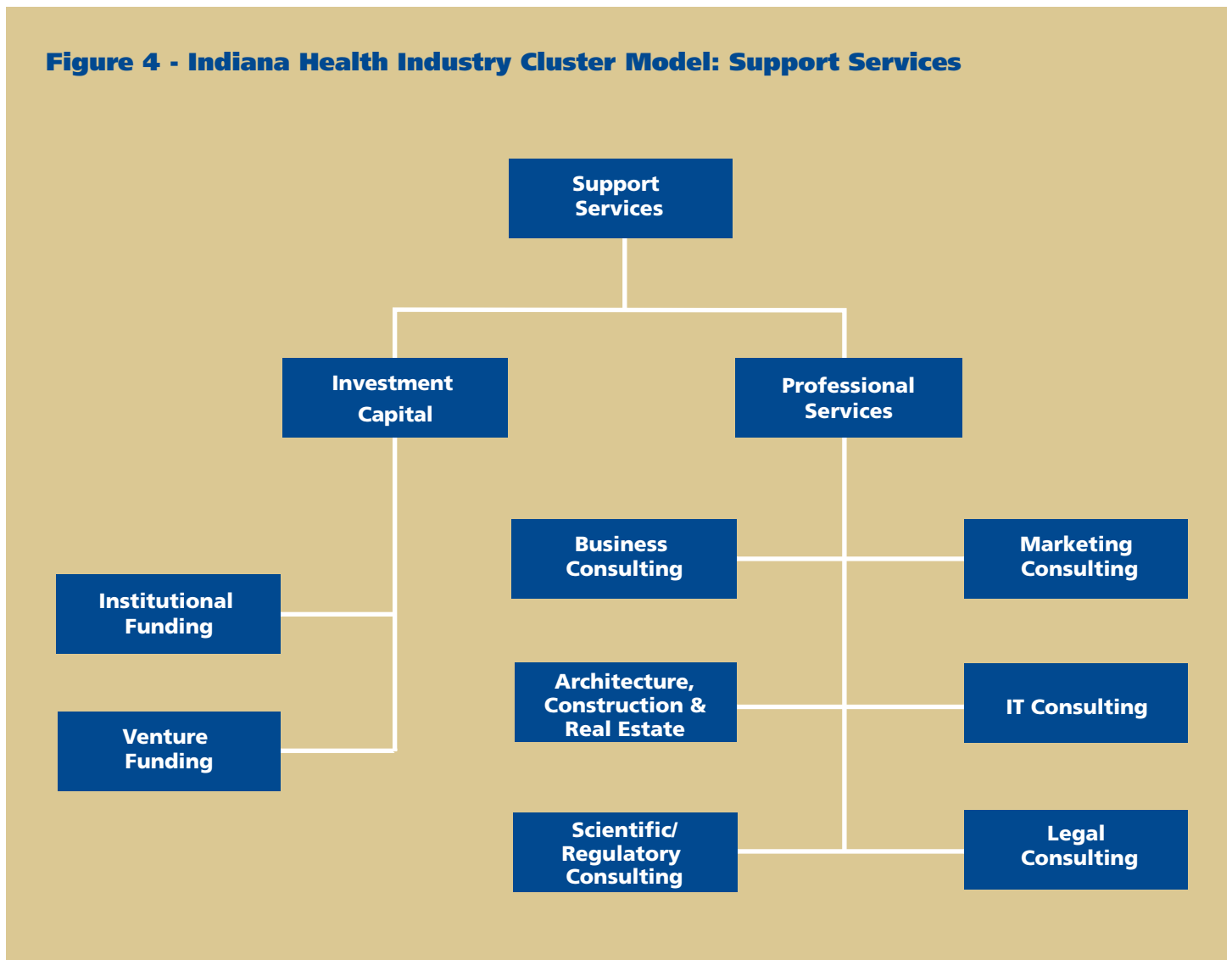
In addition to abundant access to fundamental health and life science capabilities, companies in Indiana are in close proximity to a plethora of specialized support services (Figure 4) — such as regulatory, legal and marketing expertise — as well as investment capital at a variety of levels.

While access to capital tends to be an issue for all emerging companies, Indiana's public and private institutions have made a commitment to ensure that innovative ideas will have an opportunity to see the light of day through various investment vehicles.

For example, the Indiana Future Fund is a \$73 million capital pool that has invested in regional and national venture capital funds, encouraging direct investment in Indiana life sciences opportunities. Organized

through BioCrossroads, Indiana's life sciences initiative, and managed by Credit Suisse First Boston (CSFB), Indiana Future Fund I includes investments by Indiana's public pension funds, Eli Lilly and Company, Anthem Blue Cross and Blue Shield (now WellPoint), Indiana University, Indiana University Foundation, Purdue University, Ball State University Foundation, American United Life Insurance Company, Indiana State University Foundation and Guidant Corporation.

Figure 4 - Indiana Health Industry Cluster Model: Support Services



Indiana's Research Universities

As Indiana continues to pursue the health industry as an important factor in its overall plan for economic growth, the state's colleges and universities will continue to be key players in those efforts. Certainly, Indiana boasts some of the finest academic and research institutions in the nation. But an increasing number of university collaborations with the commercial sector, in areas as diverse as biopharmaceuticals, proteomics and informatics, make Indiana's academic sector much more than a vibrant breeding ground for the state's next researchers, physicians and health industry entrepreneurs.

Indiana's world class universities provide research capital, laboratories, technology, and a collaborative environment for the private sector that is among the best in the country. Central Indiana alone enjoyed more than \$650 million in university-funded research expenditures in 2002 — nearly 50 percent of which was devoted to life sciences.

While Indiana University and Purdue University receive significant recognition for their research and commercial collaborations, top-notch life science developments are accelerating at the University of Notre Dame, Ball State University and Rose-Hulman Institute of Technology. Between university and private sector research and development, Indiana has built up significant intellectual capital in areas such as analytical chemistry, biomedical engineering, genomics, proteomics, healthcare information technology and

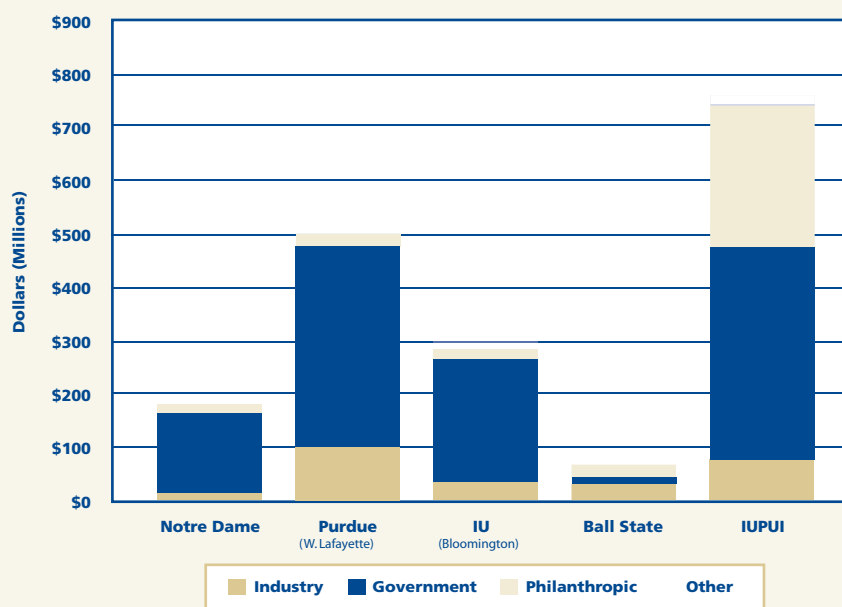
nanotechnology. Experts expect those efforts to be self-perpetuating and to take on a greater economic importance as time goes on.

The Indiana Genomics Initiative, a world-class biomedical enterprise built on the existing strengths of the IU School of Medicine, takes advantage of the explosion of new data derived from the federally funded Human Genome Project, which mapped the genetic sequence found in humans. With the near completion of that project, scientists must now begin to unravel the mysteries of what the sequence means. Funding for the Indiana Genomics Initiative is made possible through a \$155 million grant from the Indianapolis-based Lilly Endowment Inc.,

one of the nation's leading philanthropic organizations. Conservatively speaking, the project is expected to leverage the grant to generate an additional \$243 million in research grants coming to the university.

In early 2001 Purdue University, Indiana University, and Eli Lilly and Company began developing a mechanism for scientists from all three institutions to work together on projects that leveraged the universities' world-class expertise in analytical chemistry and instrumentation and Lilly's long history of experience with protein therapeutics and protein drug targets. The goal was to go beyond

**Figure 5 - Sources of Research Funding
(Academic Years 2001 – 2004)**

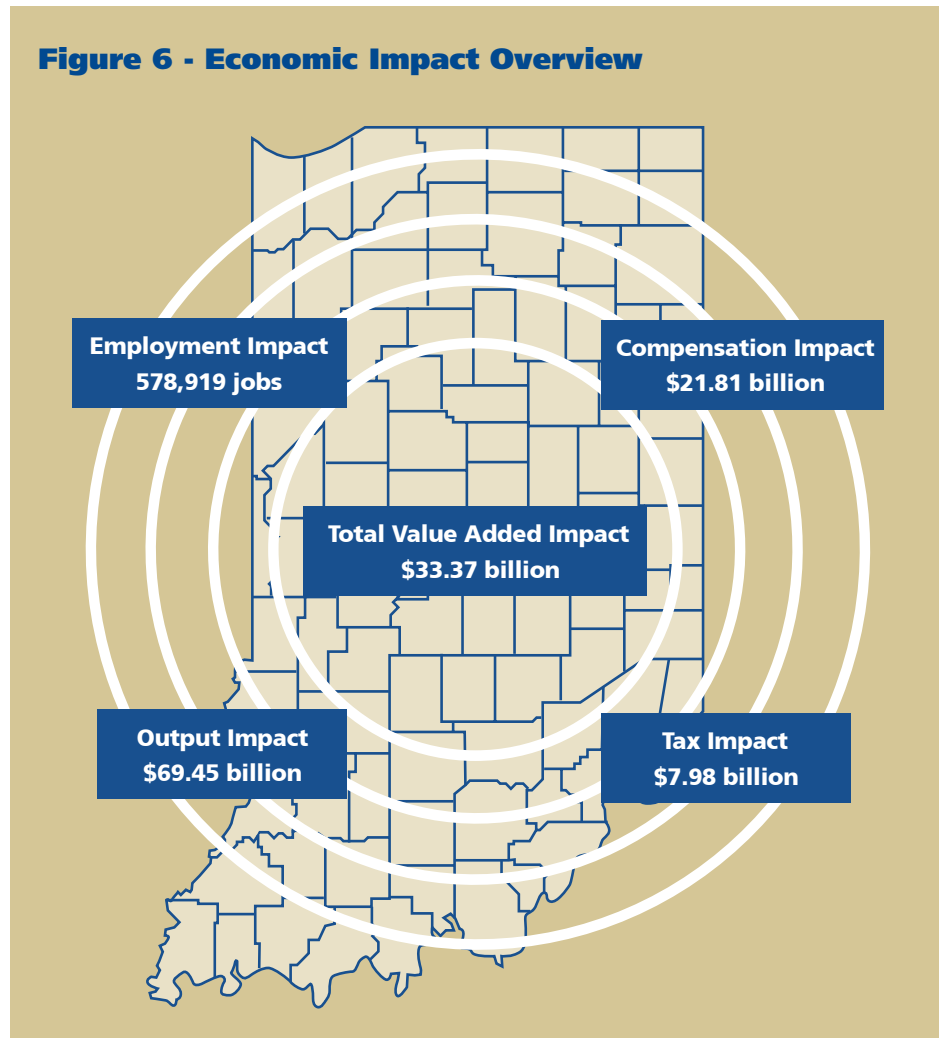


traditional academic-industry partnerships to create a unique, synergistic environment for breakthrough innovation. By creating this potent combination, the founders intended for Indiana to be recognized as an attractive region for investment in the life sciences. The group decided to collaborate in the field of proteomics. Four revolutionary projects were selected to initiate the Indiana Proteomics Consortium, which on July 1, 2003 started doing business as Inproteo. Since its inception, Inproteo has spun off two companies and licensed other technologies to existing health industry companies. Additionally, the Indiana Centers for Applied Protein Sciences (INCAPS), a contract research services and technology validation organization focused on proteomics, sprung from Indiana's competitive advantage in this field.

One of the obvious roles Indiana's colleges and universities will continue to perform is training future scientists, researchers and entrepreneurs. The universities are constantly improving their offerings and churning out extremely desirable graduates. In response to industry demand, the Indiana Health Industry Forum fostered a collaboration between private sector industry leaders like Eli Lilly and Company, Dow AgroSciences, Baxter Pharmaceutical Solutions and Roche Diagnostics, and Indiana University-Purdue University at Indianapolis and Ivy Tech State College, to develop a two-year Associate's Degree in biotechnology.

Now, 11 Indiana health industry companies are actively enrolling their employees in the new degree programs at IUPUI or Ivy Tech. The program provides an outlet for existing employees to upgrade their skills and meet evolving company needs and for prospective employees to acquire high demand skills. Students can also transition their new Associate's Degree into a four-year bachelor's degree.

Figure 6 - Economic Impact Overview



All of the outstanding health and life science programs available at the state's top colleges and universities continue to produce members of an extremely qualified health industry workforce for Indiana's existing and emerging companies — further evidence that Indiana is a prime location for health industry businesses.

Successful cluster models of economic growth are built upon strong foundations. Indiana's footings in biopharmaceuticals, medical devices and healthcare delivery are rock solid.

According to a June 2004 report by BIO, *Laboratories of Innovation: State Bioscience Initiatives 2004*, prepared by the Battelle Memorial Institute, Indiana is one of only three states to have a specialty in three (of four) bioscience subsectors — pharmaceuticals, medical devices and agricultural chemicals. With market leaders in biopharmaceuticals and medical devices like Lilly, DePuy, Roche Diagnostics, Guidant, Cook, Biomet, Baxter Pharmaceutical Solutions, Bayer Diagnostics, Zimmer, Bristol-Myers Squibb, Mead-Johnson Nutritional, Hill-Rom and many others, the state is well-positioned to grow and capitalize upon its burgeoning health industry.

Economic Impact of the Health Industry

The economic impact of Indiana's health industry on the state's economy is enormous. As shown in Figure 7, *Critical Mass 2005* shows the health industry directly generates \$39.98 billion in output (10.28% of total state output). An additional \$29.48 billion of output is created through indirect and induced activities of the health industry, creating 17.86% of total state output. In total, over 578,000 Hoosiers' jobs are tied directly or indirectly to the state's health industry.

To assess the total impact of Indiana's health industry for this report, the Indiana Business Research Center used the widely accepted IMPLAN economic modeling system for this report (for more information go to: www.IMPLAN.com). It is important to understand that the IMPLAN model calculates economic impact of the health industry itself, plus indirect (businesses that are directly linked to the industry) and induced effects (additional employment and

spending caused by the direct and indirect industry). In other words, the health industry has an economic impact from pharmaceutical, medical device and healthcare delivery businesses themselves but also extends to companies who do business with those firms.

The data in Figure 7 clearly demonstrates the many ways that Indiana's health industry positively impacts the state's economy and is a significant contributor to Indiana's economic health.

As shown in Figure 8 (page 11) each segment of the health industry (pharmaceuticals, medical devices, healthcare delivery and payors) contributes wages higher than the average state wages for any other industry, with wages in the pharmaceutical industry at more than two times the average state wage.

Other data shows Indiana has a strong balance and base for the health industry, a

complement for Indiana's traditional manufacturing base. According to an October 2004 report by the Milken Institute, *Biopharmaceutical Industry Contributions to State and U.S. Economies*, "States with well-established manufacturing operations typically have the highest multipliers on their economies. States with tightly woven biopharmaceutical clusters are more likely to capture the maximum economic benefit from the industry's activity as more of the stimulus will remain in the local economy and less leaks outside."

According to the Milken report, more than 19,500 people are employed directly by Indiana's biopharmaceutical industry and another 97,000 jobs are generated throughout the rest of the state's economy. In fact, according to Milken Indiana has the highest direct-effect biopharmaceutical employment multiplier — 6 — of any state in the country, meaning every job in this sector creates six additional jobs in Indiana.

Figure 7 - Indiana Health Industry Economic Impact

The Statistic	What it means	Direct Impact	Total Impact	% Indiana
Employment	Number of Hoosier jobs	274,109	578,919	19%
Compensation	Total wages paid	\$13.10 billion	\$21.81 billion	19%
Economic output	Value of goods and services produced	\$39.98 billion	\$69.45 billion	18%
Total value added	Total contribution to Gross State Product	\$18.63 billion	\$33.37 billion	17%

Taxes Paid: Health Industry

Indiana Taxes	Federal Taxes	% of Indiana Total Taxes
\$2.48 billion	\$5.50 billion	20%

It would be hard to dismiss the industry's importance to Indiana's economy based on those figures alone. However, researchers would argue that the true measure of a biopharmaceutical cluster is its level of innovation. Indiana — ranked 14th in the nation (Massachusetts ranked first) for the highest amount of biopharmaceutical patents (2.46 per 100,000 people) — has proven to be a biopharmaceutical market leader.

While biopharmaceuticals continue to flourish around the state, the medical device industry has continued its own explosive growth. Employing approximately 19,500 Hoosiers, a number of industry leading medical device manufacturers are found around the state, but the largest and most well-recognized cluster of companies operates in Northern Indiana, where Warsaw is

often referred to as the orthopedic capital of the world. Indiana's medical device industry ranges from orthopedic implants and urological products to diagnostic devices. Emerging medical device companies can be found in many parts of Indiana, capitalizing on our historic strengths in orthopedics, imaging, analytical chemistry and diagnostics.

Perhaps more than any other of Indiana's health industry sectors, the medical device sector is uniquely positioned to take advantage of the state's traditional manufacturing base as part of cluster building efforts. With the appropriate research, development and process adjustments, many of Indiana's traditional manufacturers have the ability to carve out new niches in

medical device manufacturing as suppliers to established companies (see sidebar about Fort Wayne Metals below).

It's clear that opportunities for growth abound throughout Indiana's health industry, and healthcare delivery is no exception. Because the intent of this report is to describe the health industry landscape with an eye toward economic development, the report does not examine every health care facility in Indiana or account for potentially rising star organizations outside of the spotlight. Rather, the report looks at those assets which can be leveraged immediately. Of the more than 7,500 health care delivery organizations in Indiana, 22 have been included in this report based on their

Wiring Indiana's Health Industry

When Ardelle Glaze started Fort Wayne Metals Products Corp. in 1946, he couldn't have known the wire he manufactured for the recording industry would position his company to become a leader in the modern medical device industry. Today, Fort Wayne Metals produces wire for use in catheters, guides, pacing leads, orthopedic appliances, orthodontic devices and many other applications, and has become the U.S. market leader in its industry.

The Fort Wayne Metals story is a classic illustration of an Indiana firm that recognized a niche in the state's growing health industry cluster. Together with Bloomington-based Cook in the 1970s, Fort Wayne Metals developed a method of producing vacuum melted stainless steel wiring for use inside the body during minimally invasive medical procedures. During the 1980s, Fort

Wayne Metals was the first company to use drawn filled tubing to create highly conductive, biocompatible leads for products like implantable defibrillators.

"Fort Wayne Metals was supporting other industrial wire industries here in Indiana," said Bob Myers, Fort Wayne Metals executive vice president.

"Today there are quite a few wire and cable-making companies in the Fort Wayne area. One of the key reasons we're located here is because of the rich supply of diamond die-makers here that make dies critical to the processing of wire. Dies are a huge part of our cost of goods."

The list of Fort Wayne Metals' own innovations is lengthy, as is the Fort Wayne Metals' client list. With 300 employees in Fort Wayne and another 25 in offices throughout Europe, the company counts Indiana companies

like DePuy, Zimmer, Biomet, Cook and Guidant among its prestigious medical device client list. In total, Fort Wayne Metals has about 600 clients including all of the major players in the industry.

"We've announced we will expand in the next five years and will hire 100 more employees," said Myers.

As Fort Wayne Metals expands, it's clear that the medical device cluster in which it operates will have opportunities to expand as well; particularly the die-makers and other Fort Wayne Metals suppliers.

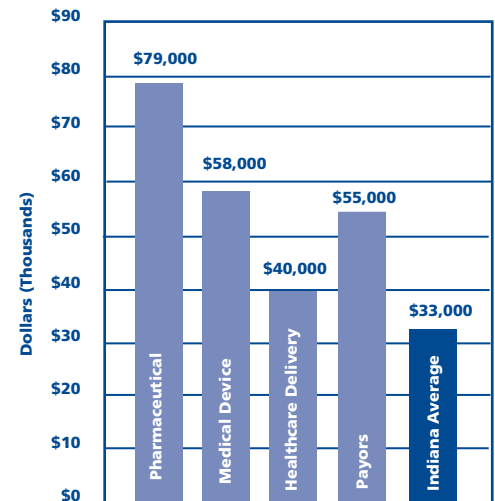
"There's a bed of technology that kind of evolved in support of that industry. We came here looking for that support and grew," Myers said. "It illustrates the point that the life sciences can be the Holy Grail." (www.fwmetals.com)

specialized disciplines, research, renowned medical services and facilities. They are referred to as Centers of Excellence (COEs). A listing of the individual COEs is available at www.IHIF.org.

In any health industry cluster, COEs are one of the keys to gaining and maintaining a leading market position. The selected health care delivery organizations with their COEs are known around the state and beyond Indiana borders. Examples such as the Indiana Health Information Exchange (Indianapolis)

(see sidebar below), Michiana Health Information Network (South Bend) and MedWeb (Fort Wayne) demonstrate the value of collaboration between healthcare institutions to improve cost and quality metrics. What can be said definitively is that healthcare delivery is a creator of job growth. The Indiana Health Industry Forum “Health Industry Gap Analysis” report (2003) predicted that we can expect that 40,000 to 45,000 new job openings will be created between 2003 and 2008 in the health industry.

Figure 8 - Indiana Wages 2003



Indiana Non-Profit Building the Medical Information Superhighway

Indiana is known as the Crossroads of America for its unparalleled access to the nation’s superhighways and transportation networks. The Indianapolis-based Indiana Health Information Exchange (IHIE) is working to add the designation as the nation’s crossroads of medical information. Interestingly, it was a crossroads of collaboration that lead to IHIE’s inception.

Incorporated as a not-for-profit in 2004, IHIE was founded by a unique collaboration of 13 institutions representing hospitals, physicians, researchers, public health organizations, and economic development groups.

Extending the infrastructure already built by the Regenstrief Institute — an internationally recognized pioneer in the field of clinical informatics — IHIE is creating a successful state and national model for the exchange of health information.

“Moving to a paperless system without a way to move documents around is like building a McDonald’s and hoping someone will build a highway,” said Dr. Marc Overhage, president and CEO of IHIE and senior investigator for the Regenstrief Institute. “The great thing IHIE has done is to build the beginnings of a sustainable business model for replacing the old ways of exchanging health information.”

Regenstrief has studied the way physicians use clinical information systems for many years, but the organization and its mission are not set up to develop commercial entities on its own. Instead, Regenstrief provided research and its existing infrastructure to begin building IHIE’s business model. IHIE’s first service is a community-wide clinical messaging service, which provides physicians with a single source for clinical results including laboratory/pathol-

ogy, radiology, and electrocardiogram reports, transcriptions, and emergency department and hospital encounter information from all participating central Indiana hospitals.

The service delivers clinical reports to the responsible providers electronically reducing costs for the health care data provider and improving efficiency and usability for the recipient. The clinical messaging software converts electronic reports into a consistent, easy-to-use format and delivers them to the responsible provider.

“We’ve done studies that show patients who receive care from physicians who have access to shared medical data receive care that’s more efficient and less costly,” Overhage said. (www.ihie.com)

Suros Navigates Indiana's Health Industry Cluster Toward Success

While there are many examples of Indiana's health industry cluster producing and maintaining outstanding companies, Indianapolis-based Suros Surgical Systems is a rising star.

Suros launched its ATEC® (Automated Tissue Excision and Collection) system for breast biopsy in 2002 after the company's founders approached life science business incubator Rose-Hulman Ventures (RHV) — a Rose-Hulman Institute of Technology affiliate — with a business plan to enter the breast biopsy market. "We began to build the company from there," says Jim Pearson, Suros president and CEO. "It hooked us up with a relationship that allowed us to take advantage of the expertise that was already there."

Pearson says the RHV investment connected the company with Rose-Hulman's engineering expertise, gave Suros credibility, and allowed access to equipment the fledgling firm could never have purchased on its own.

A vibrant health industry cluster fosters an invaluable web of connections and a strong community of like-minded firms. Suros' Chairman of the Board, James R. Baumgardt, used his connections as president of the Guidant Foundation and as a partner in Twilight Venture Partners to get Suros further funding. Twilight has invested about \$2 million in Suros.

Overall, the company has secured more than \$20 million of investments from larger investors, including \$12

million of financing in 2004 led by Morgan Stanley Venture Partners, and more than 45 angel investors. "Almost all of our money is from Indiana," Pearson says.

Today, Suros employs more than 85, including several Rose-Hulman graduates which helps perpetuate Indiana's health industry cluster by keeping qualified graduates in-state. Pearson says Suros plans to employ more than 200 people by 2007.

As for Suros suppliers, Pearson says much of what it needs it can get from companies in Indiana. "We're very focused on showing that Indiana can develop the technology, manufacture it, and distribute it," he says. (www.surossurgical.com)

Summary and Conclusion

In some respects *Critical Mass 2005* reinforces what has been previously documented — that Indiana's health industry is a vital creator of value in Indiana's current economy. With many large and mature, yet rapidly growing, pharmaceutical, medical device and healthcare firms located here, the health industry's economic impact is dramatic and unmistakable. Further, our universities provide a solid infrastructure to develop the talented people and the ideas necessary to create value in health industry companies.

However, *Critical Mass 2005* goes further and explores the key sectors that comprise the health industry cluster and provides a beginning point for development of specific strategies to strengthen current Indiana businesses and create new ones. It is clear that core health industry companies, on a

global basis, will continue to increase their use of strategic suppliers in the discovery, development and manufacturing of new innovative healthcare products and services that offer the promise of more effective and efficient healthcare.

As we look toward the future, Indiana clearly possesses the asset base upon which to accelerate the growth of the existing cluster companies and to create new high growth businesses. Doing so will require a commitment on Indiana's part to:

- increase available investment capital resources
- enhance our research universities' capacities to successfully compete for federal research dollars

- enable the efficient and effective transfer of technology from our universities to strengthen current or create new Indiana businesses
- support Indiana health industry companies' abilities to successfully compete with domestic and global competitors

With an impressive array of assets across multiple health industry sectors, Indiana is poised to take advantage of emerging trends in biopharmaceuticals, medical devices and healthcare delivery. A solid base has been established in each sector and a healthy supply chain is finding new ways to grow and fit into what has become the driving force in Indiana's economic growth: the health industry.

Acknowledgments

The Indiana Health Industry Forum thanks Deloitte & Touche USA LLP and the Indiana Business Research Center for their generous support and leadership in conducting the research that serves as the basis for this report.

IHIF believes the health industry represents a comprehensive state-wide economic opportunity for the state of Indiana. As evidence, we received overwhelming support from a number of organizations around the state. IHIF would like to thank the following organizations which have contributed their time and financial resources toward the development of this report.

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ECONOMIC DEVELOPMENT PARTNERS

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- **Bloomington Life Sciences Partnership**
- **City of Terre Haute**
- **Elkhart County Economic Development Corporation**
- **Fort Wayne Allen County Economic Development Alliance**
- **State of Indiana**
- **The Indy Partnership**
- **Lafayette-West Lafayette Economic Development Corporation**
- **Northeast Indiana Corporate Council**
- **Project Future (South Bend)**
- **The Richmond-Wayne County Chamber of Commerce**
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