

Indiana University–Purdue University

# Indianapolis

Impact Study 2008



Produced by the Indiana Business Research Center at Indiana University's Kelley School of Business

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# Executive Summary

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Indiana University–Purdue University Indianapolis (IUPUI) has played a fundamental role in its region since it was established in 1969. IUPUI provides central Indiana residents with affordable and convenient access to a range of continuing education, certificate and degree offerings at a premier research university. As a result, IUPUI strengthens the economic competitiveness of the state and increases the earning power of its residents. IUPUI’s impact on the state extends beyond its academic mission. The university’s budget, the civic engagement of students and staff, and the campus’ cultural contributions also bestow many economic benefits to the region.

The present study was undertaken to measure how IUPUI improves the lives of Hoosiers in the Indianapolis region. This report presents policymakers, university officials and Indiana taxpayers with comprehensive yet conservative estimates of the university’s impact. IUPUI receives a significant commitment of state resources, and it is useful for any public institution, including universities, to show the rewards of such commitment.

One way to present how Indiana benefits from IUPUI is to consider results related to the core mission of the university as well as results that are collateral to the university achieving its core mission. The core mission is education and research. Collateral benefits would include the economic benefits of the university spending associated with its core mission or the economic benefits of, for example, the service-learning that mobilizes students to work for free in the community.

A variety of methods were used to measure the core and collateral benefits of IUPUI. The core benefits—meaning those benefits that relate to the university’s core mission of education and research—are derived from university records or government data sources. These data highlight characteristics of the student body, the number and type of degrees conferred, the settlement patterns of recent graduates, and the amount of outside research funding IUPUI attracted. Core benefits data help to answer many key questions including: Do alumni apply their skills in the state or find work elsewhere? Does IUPUI curriculum support Indiana’s economic development priorities in the life sciences? Does university research and development generate private-sector commerce?

This analysis of core benefits focuses almost exclusively on tangible metrics within the state. However, many benefits associated with the university’s educational and research mission are difficult to quantify and are global in reach. Moreover, some benefits that flow from IUPUI’s core mission result in tangible economic benefits to the individuals who attend the university, namely, the expected increase in lifetime earnings resulting from higher educational attainment.

Following the presentation of the core benefits, attention turns to the collateral benefits of IUPUI. These benefits recognize the effects that university expenditures and the activities of students, staff and visitors have on the local community. For instance, traditional input-output analysis reveals the economic activity related to the university’s operating budget and student spending. The monetary value of student service-learning and student volunteering is also added into the total of collateral benefits. Additionally, the value of faculty and staff civic engagement is also measured.

The following bullet points summarize the key findings of these analyses.

## Core Mission Benefits

- The first section of this report, **Characteristics of IUPUI Students**, presents profiles of the student population and its recent graduates. IUPUI's fall 2007 enrollment totaled 28,300 students—90 percent of whom were Indiana residents. Of the university's 19,700 degree recipients between 1998 and 2002, 72 percent were residing in Indiana as of 2008. The two leading counties of residence for this cohort are Indiana's Marion and Hamilton counties.
- The **Contribution to Human Capital** section examines IUPUI's degree output and the economic value of these degrees to recipients. IUPUI conferred 21,800 baccalaureate, master's, professional and doctoral degrees between 2002 and 2007, 13 percent of the total for all of Indiana's public universities. The most common fields of study at the baccalaureate level were arts and humanities and business administration while business administration was the most frequent master's degree conferred. The university awarded 6,000 degrees related to life sciences over this period.
- IUPUI graduates can expect far greater lifetime earnings than people with a two-year associate's degree. The typical male IUPUI graduate can expect to earn \$2.1 million over his lifetime and the typical female graduate can anticipate \$1.5 million in lifetime earnings. These figures are 64 percent and 50 percent greater, respectively, than the expected lifetime earnings of male and female associate's degree recipients.
- The section on **University Research and Business Development** details annual sponsored research expenditures at IUPUI, as well as technology transfer and business start-up activity. IUPUI has averaged \$166 million in annual research expenditures supported by external contracts and grants in fiscal years 2006 through 2008. Eighty-seven percent of these funds went to support research at the IU School of Medicine. Between 2004 and 2007, university research generated 348 new invention disclosures, 131 new patent applications and 54 new patents issued.

## Collateral Benefits

- This report measures the economic benefits of IUPUI's **Civic Contribution**. Through the imputed value of service-learning programs, and volunteerism, students, staff and faculty “give back” to their community and to the campus region (see Figure 1). Table 1 presents the imputed dollar value of their contributions.
- In addition, this report notes that members of the IUPUI community also made \$4.3 million in charitable contributions to organizations operating within the Indianapolis area.
- IUPUI also enriches its region through its community engagement programs, facilities and cultural offerings. Whether it's the Herron Art Galleries, the IUPUI Sports Complex or University Library, IUPUI gives area residents something to be proud of.

- Finally, the **Economic Footprint** section reports the employment and economic significance of spending by the university, students and visitors. The estimates in Table 2 report the effects of direct expenditures (e.g., university purchases and compensation of faculty and staff) as well as the “ripple effects” of these expenditures within the community. In addition to IUPUI’s employment of 7,051 faculty and staff, university spending accounts for an additional 13,210 jobs in the region.

**Table 1: Estimated Benefits of Student and Staff Civic Contributions, IUPUI, 2006-2007**

Civic Contribution	Estimate of Economic Benefit
Service-Learning	\$387,500
Student and Staff Volunteerism	\$3,022,800
<b>Total</b>	<b>\$3,410,300</b>

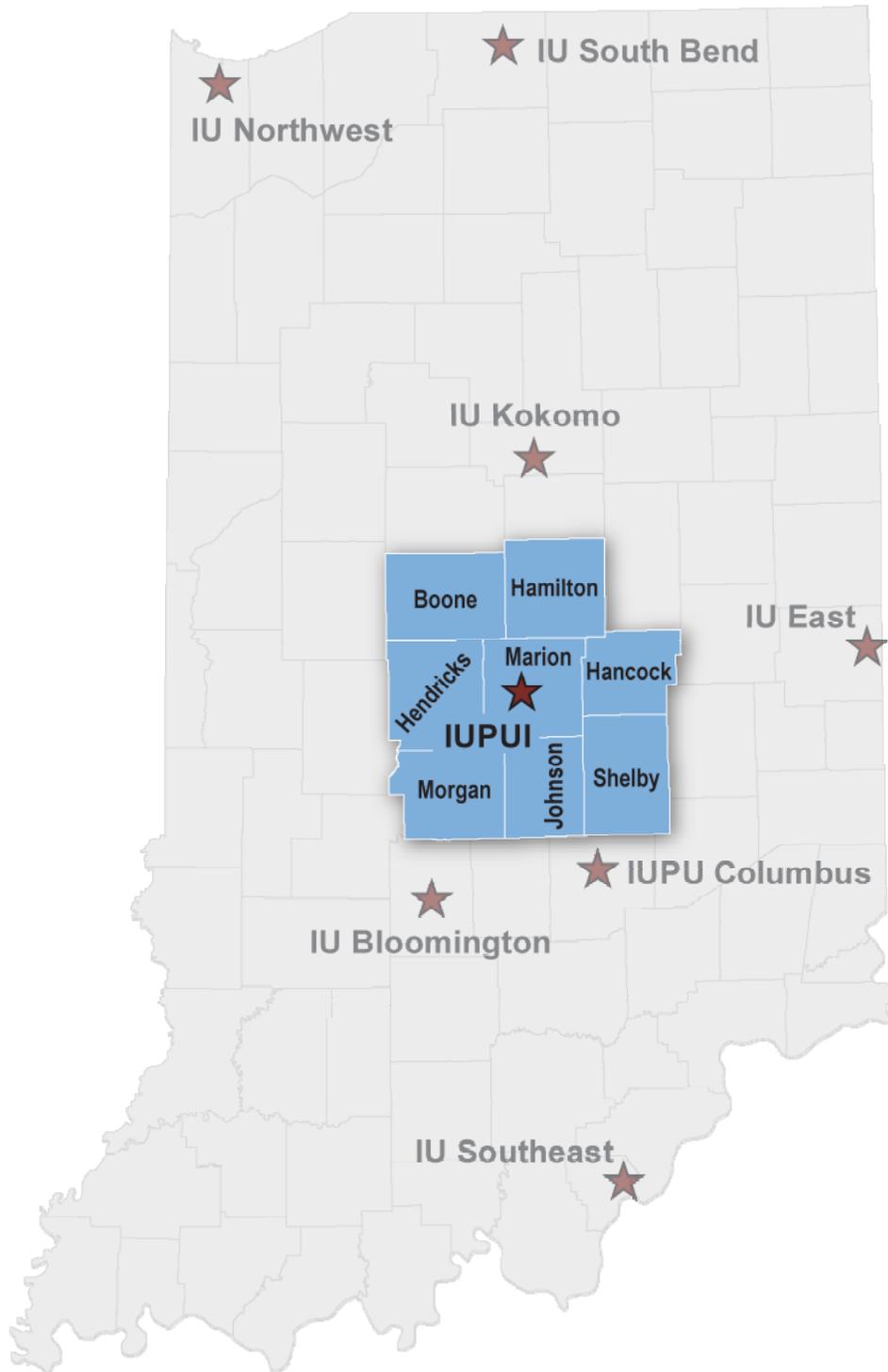
Source: Indiana Business Research Center (IBRC)

**Table 2: Estimated Employment and Economic Footprint, IUPUI, 2006-2007**

Type of Spending	Total Employment Effects (number of jobs)	Total Economic Output Effects (in millions)
Faculty and Staff Compensation	3,970	\$699.6
University Purchases and Construction Expenditures	2,380	\$447.7
Medical School Supplemental Expenditures	6,860	\$775.0
Student and Visitor Expenditures	3,760	\$551.3
<b>Total</b>	<b>16,970</b>	<b>\$2,473.6</b>

Source: IBRC, using IMPLAN model results

Figure 1: IUPUI Campus Region



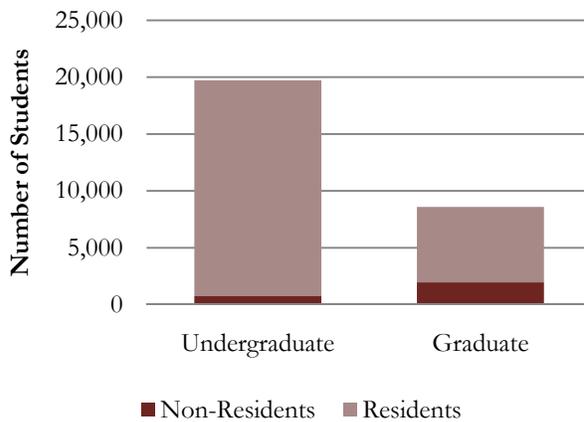
# Characteristics of IUPUI Students

In the fall of 2007, student enrollment at IUPUI stood at 28,321 students. Sixty-one percent of these students attended full-time, while the remaining 39 percent attended part-time.

## Student Origin

Overall, 90 percent of IUPUI students are Indiana residents. This varies significantly by student status, however: Four percent of undergraduates come from out of state, compared to 23 percent of graduate students (see Figure 2).

**Figure 2: IUPUI Application Residency by Student Status, Fall 2007**



Source: IBRC, using data from the Office of University Planning, Institutional Research and Accountability

Students come to IUPUI from 44 states plus the District of Columbia. As Table 3 shows, each state other than Indiana accounts for less than 1 percent of the full-time student body.

**Table 3: Top 10 States for Full-Time IUPUI Students, Fall 2007**

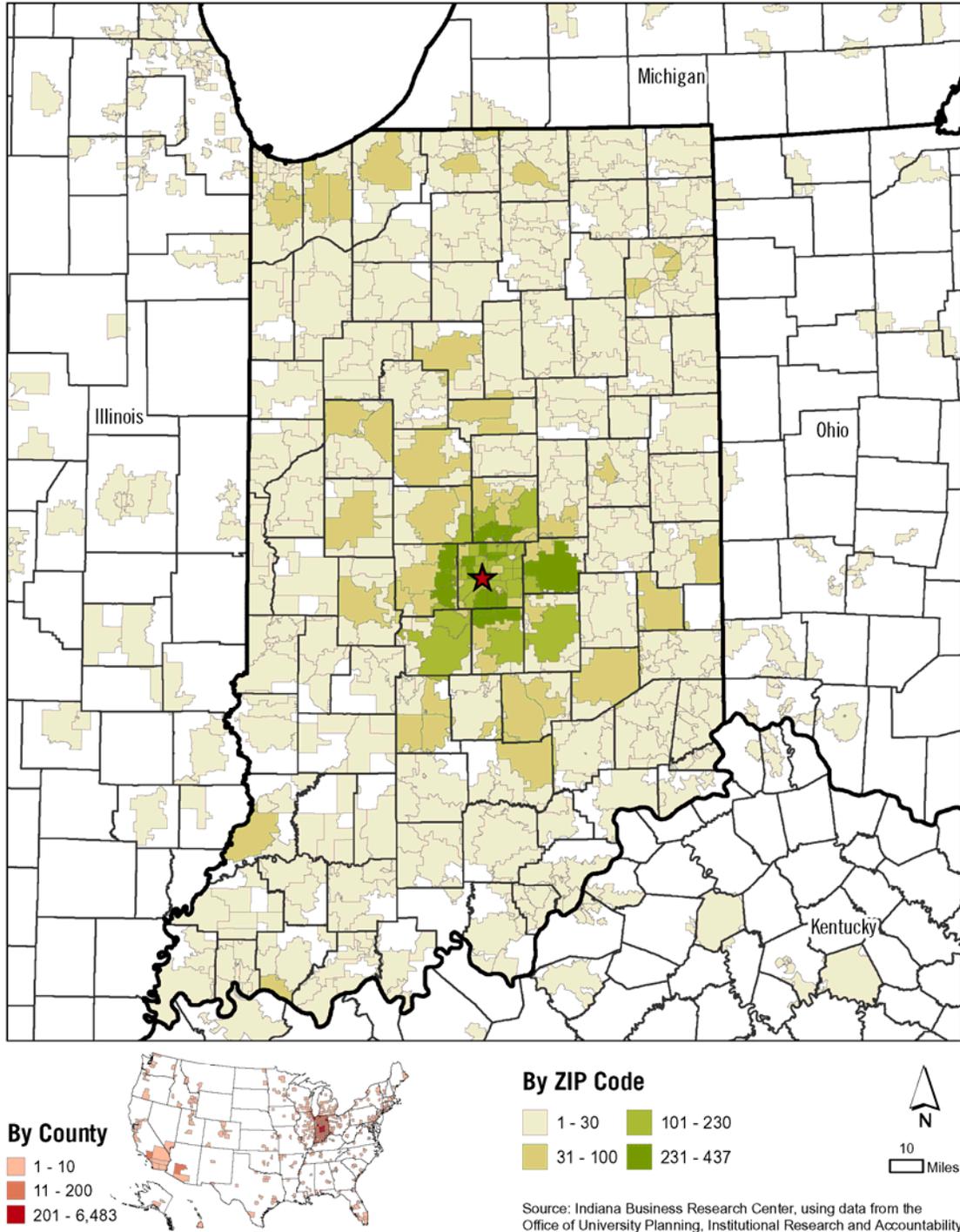
Home State	Percent of Full-Time Students
Indiana	93.1
Illinois	0.8
Ohio	0.4
Michigan	0.3
California	0.3
New York	0.2
Florida	0.2
Texas	0.2
Wisconsin	0.2
Kentucky	0.2
<b>Top Ten</b>	<b>95.9</b>

Note: The international/unknown category accounts for 2.3 percent of full-time students.

Source: IBRC, using data from the Office of University Planning, Institutional Research and Accountability

Figure 3 shows the number of full-time students by ZIP code for Indiana and the surrounding areas.

Figure 3: Residence of Origin for Full-Time Students of IUPUI, Fall 2007

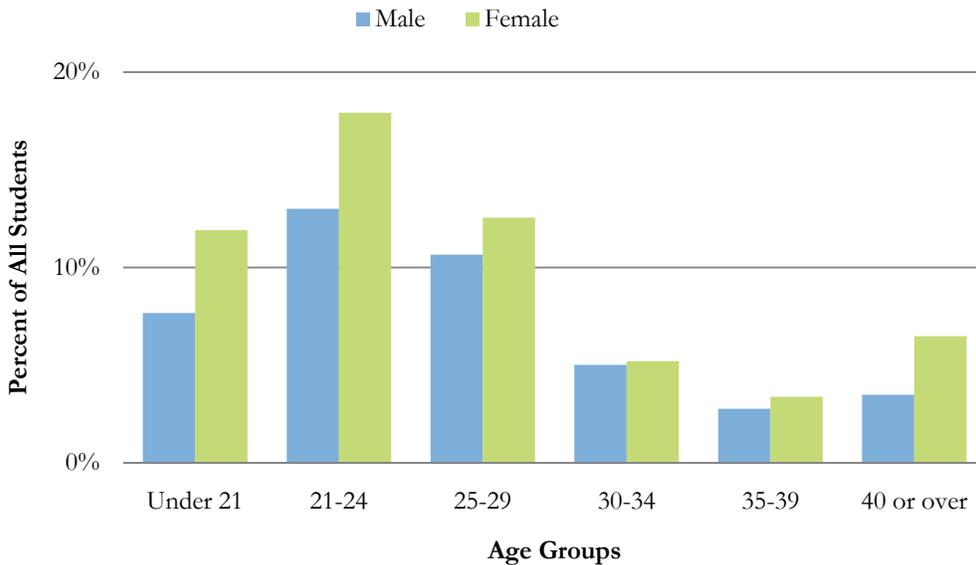


## Student Characteristics

### Age and Gender

Thirty-one percent of IUPUI students are between the ages of 21 and 24. Women comprise 57 percent of the student body. As shown in Figure 4, women outnumber men in every age group, particularly among those under the age of 21 (where women comprise 61 percent of that age group) and those 40 or older (of whom women account for 65 percent).

**Figure 4: IUPUI Students by Age and Gender, Fall 2007**

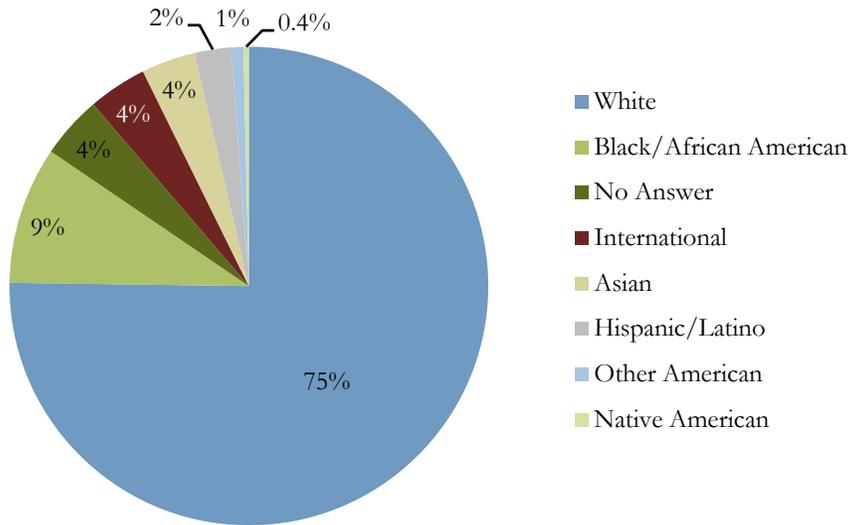


Source: IBRC, using data from the Office of University Planning, Institutional Research and Accountability

### Ethnicity

Three-quarters of the student body categorize themselves as white (see Figure 5). Under-represented minorities (blacks, Hispanics and Native Americans) account for 12 percent of all students. Blacks comprise 9.3 percent of the student body, followed by Hispanics at 2.5 percent and Native Americans at 0.4 percent. Note that all international students are grouped together because ethnicity data were collected only for students applying from within the United States.

**Figure 5: Ethnic Distribution of IUPUI Students, Fall 2007**



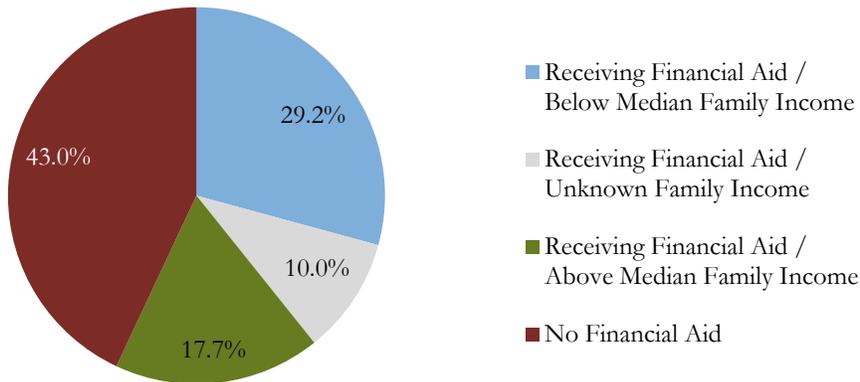
Note: Data on ethnicity were collected only for students applying from within the United States. The international category includes all those who applied from elsewhere in the world because the concept of ethnic identification varies from country to country. The Native American grouping includes both the American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander categories.

Source: IBRC, using data from the Office of University Planning, Institutional Research and Accountability

## Access and Affordability

Figure 6 shows that well over half of full-time IUPUI students receive financial aid. Additionally, about 29 percent of students both receive financial aid and are from households with family incomes lower than the Indiana median of \$47,074.

**Figure 6: Financial Aid and Family Income Status of Full-Time IUPUI Students, 2006-2007**



Note: Where family income data for financial aid recipients is “unknown,” income data may have been suppressed due to confidentiality requirements or the aid recipient may not be an Indiana resident.

Source: IBRC, using data from the Indiana Commission for Higher Education

## Settlement of Alumni

Where alumni settle after graduation plays a key role in analyzing the ultimate significance of a university campus. In contrast to those who leave, alumni who remain make ongoing contributions (e.g., increased productivity, income and cultural contributions) to their geographic region well after they complete their degrees. Table 4 shows that 72 percent of recent IUPUI graduates—those who received their degrees between 1998 and 2002—resided in the state as of 2008. The next most popular states were Illinois and California.

**Table 4: Top 10 States for IUPUI Graduates, Degrees Conferred 1998-2002**

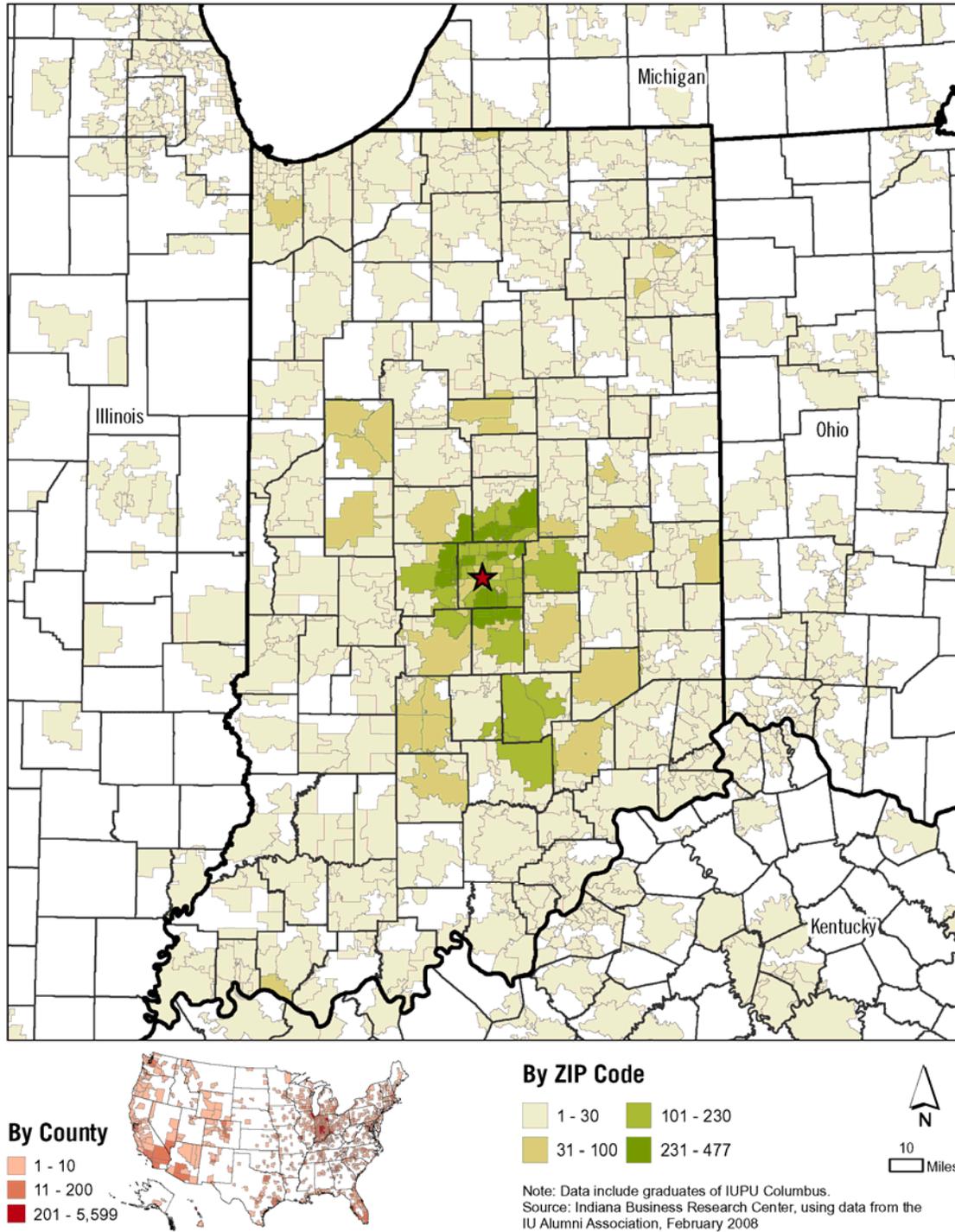
Residence	Percent
Indiana	72.3
Illinois	2.4
California	2.1
Florida	1.8
Ohio	1.7
Texas	1.4
Michigan	1.4
Kentucky	0.9
Virginia	0.9
Georgia	0.8
<b>Top Ten</b>	<b>85.5</b>

Note: The international/unknown category accounts for 3.7 percent of graduates. Graduates who earned their degrees at the IUPUI Columbus campus during this time frame are included in this data set.

Source: IBRC, using data from the IU Alumni Association as of February 2008

Figure 7 shows the settlement pattern for recent graduates by ZIP code for Indiana and the surrounding states. IUPUI graduates who earned their degrees between 1998 and 2002 have settled in every Indiana county. In 2008, those recent graduates tended to settle in Marion (5,599 graduates), Hamilton (2,026 graduates) and Hendricks (974 graduates) counties—all part of the campus region. Overall, 55 percent of IUPUI's 19,748 degree recipients between 1998 and 2002 lived in the campus region in 2008.

Figure 7: Settlement Pattern of IUPUI Graduates, Degrees Conferred 1998-2002

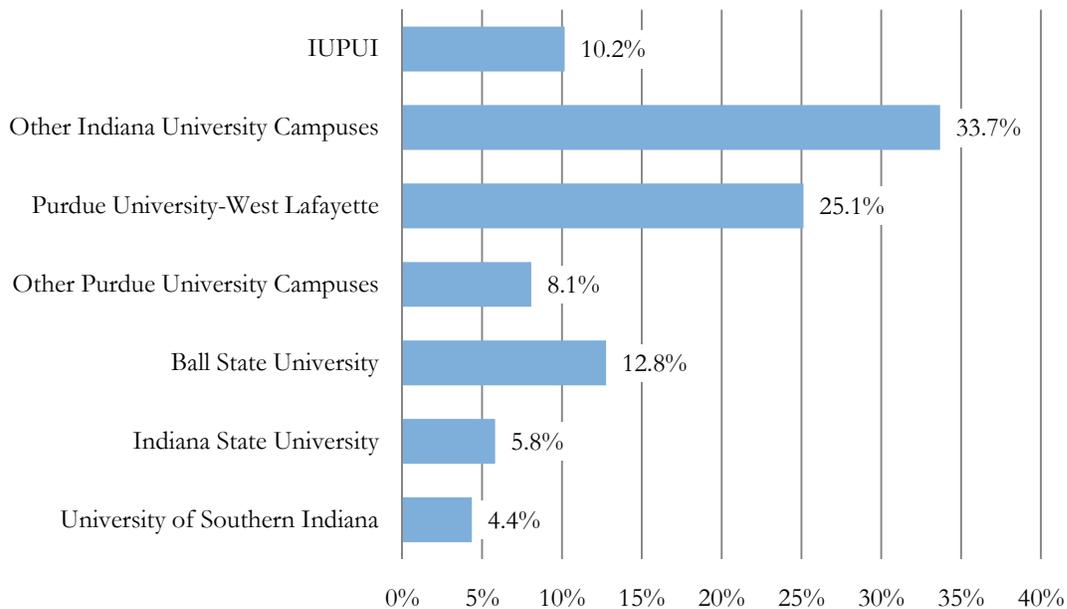


# Contribution to Human Capital

## Degrees Conferred

Of the 121,285 baccalaureate degrees conferred in the past five years by Indiana's public universities, IUPUI granted 10 percent. System-wide, IU campuses constituted almost 44 percent (see Figure 8). Purdue University campuses represented another third of these degrees and the other three state universities granted 23 percent.

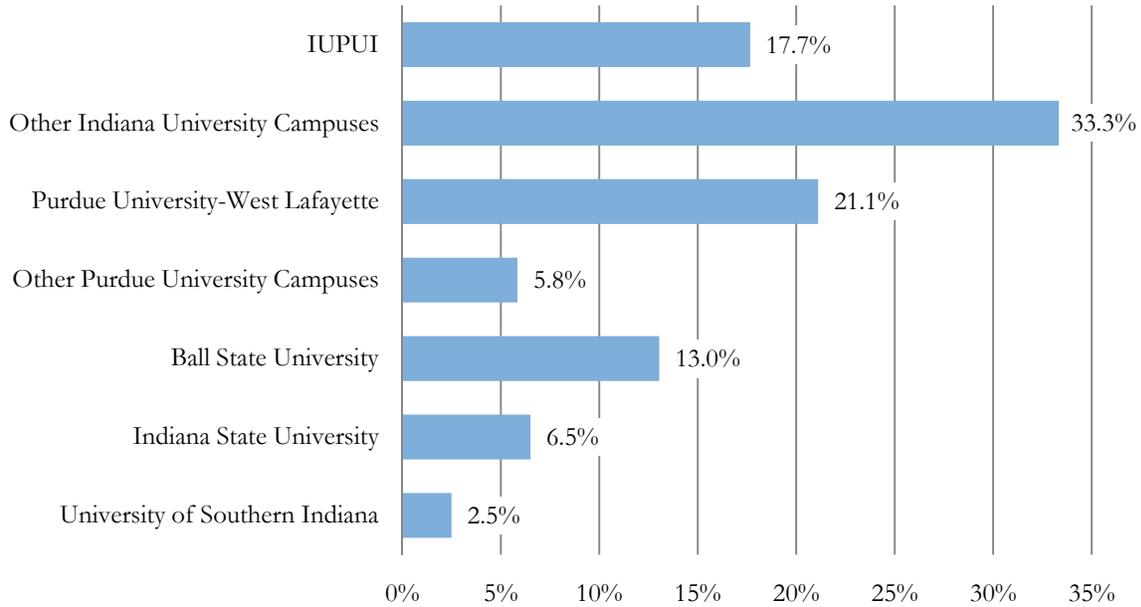
**Figure 8: Baccalaureate Degrees Conferred at Indiana Public Universities, 2002-2007**



Source: IBRC, using data from the Indiana Commission for Higher Education

Figure 9 shows that IUPUI conferred 18 percent of the master's degrees conferred by Indiana public schools, behind IU Bloomington and Purdue University–West Lafayette. Together, Ball State University, Indiana State University and the University of Southern Indiana granted less than a quarter of these degrees.

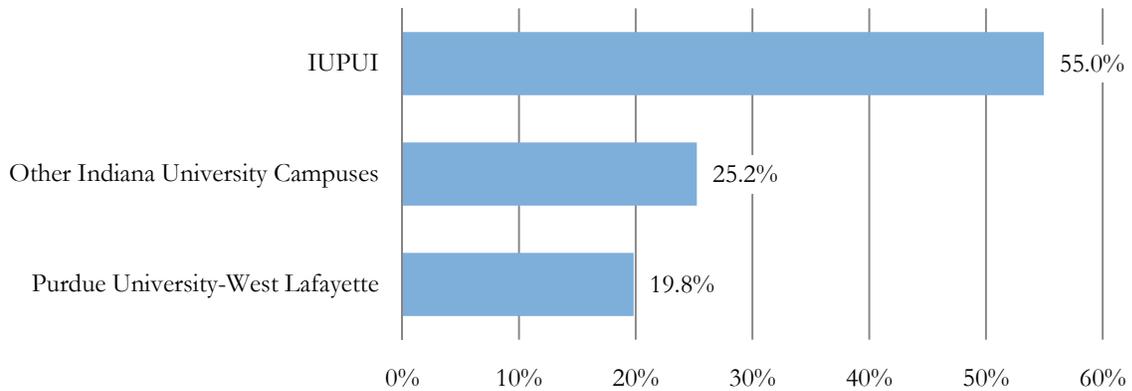
**Figure 9: Master’s Degrees Conferred at Indiana Public Universities, 2002-2007**



Source: IBRC, using data from the Indiana Commission for Higher Education

Leading the state, IUPUI constituted well over half of all professional degrees (e.g., law and medical degrees) conferred by public universities in Indiana in the past five years. Figure 10 shows that other IU campuses accounted for a quarter of these degrees and Purdue University–West Lafayette granted the remaining fifth of these degrees.

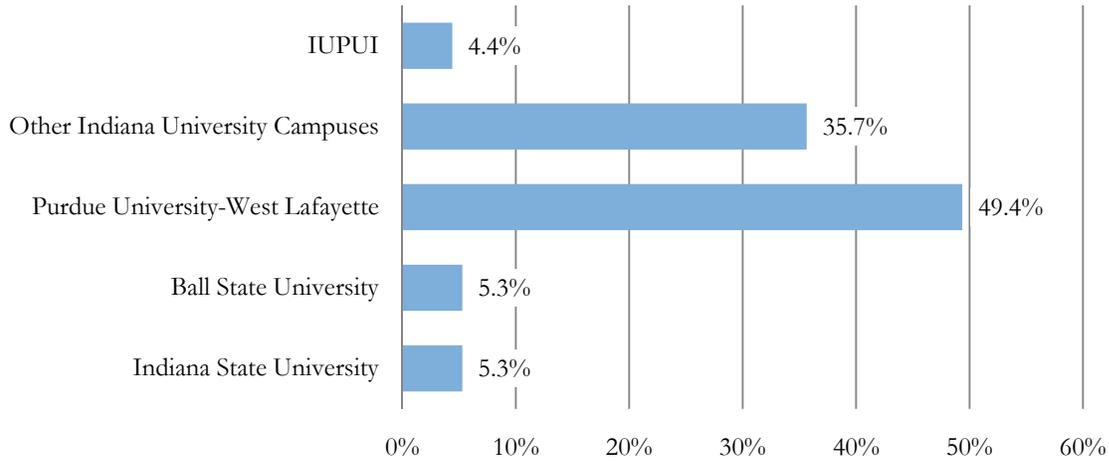
**Figure 10: Professional Degrees Conferred at Indiana Public Universities, 2002-2007**



Source: IBRC, using data from the Indiana Commission for Higher Education

Since most of IU’s doctoral programs are hosted by IU Bloomington, IUPUI granted relatively few (4 percent) of the doctoral degrees granted by Indiana’s public schools. Leading the way is Purdue University–West Lafayette, which granted virtually half of these degrees. The two other public schools granting doctoral degrees—Ball State University and Indiana State University—accounted for just over 5 percent each (see Figure 11).

**Figure 11: Doctoral Degrees Conferred at Indiana Public Universities, 2002-2007**



Source: IBRC, using data from the Indiana Commission for Higher Education

## Expected Lifetime Earnings

Indiana University provides an education that not only enriches its graduates intellectually, but also financially. By granting baccalaureate, master’s, professional and doctoral degrees in diverse fields, IU allows Indiana residents the opportunity to greatly enhance their career options and wage-earning potential beyond what they may have earned with merely an associate’s degree or less. Here we consider the increased lifetime earnings for female and male graduates completing the most popular degrees on the IUPUI campus. Lifetime earnings are estimated synthetically by summing the average wages for different age cohorts of full-time, year-round workers for each degree level and field.<sup>1</sup>

Table 5 shows that a recent female IUPUI baccalaureate graduate is expected to earn close to \$1.3 million from employment over the course of her lifetime. The most popular degree field—arts and humanities—is associated with lifetime earnings of over \$1.3 million, along with many other popular fields such as business administration and management and nursing, even without completing an additional graduate degree.

**Table 5: Estimated Lifetime Earnings for Female Baccalaureate Degree Graduates, IUPUI, 2002-2007**

Field of Study	Average Annual Number of Graduates (2002-2007)	Lifetime Earnings per Person (in thousands)
Arts and Humanities (except Music, Visual & Performing Arts)	306	\$1,303
Education (except Administrative and Math & Science Education)	210	964

<sup>1</sup> For more detail, please read the methodology section of the main report.

Field of Study	Average Annual Number of Graduates (2002-2007)	Lifetime Earnings per Person (in thousands)
Business Administration and Management	208	1,347
Nursing	202	1,368
Social Sciences (except Economics)	136	1,182
Allied Health Fields (except Nursing)	122	1,370
Public and Educational Administration and Management	64	1,173
Drama / Fine, Visual & Performing Arts	56	1,222
Communications	52	1,329
Criminal Justice/Protective Services	42	1,323
Other Fields	113	1,489
<b>Overall</b>	<b>1,512</b>	<b>\$1,272</b>

Note: Numbers may not sum due to rounding. Lifetime earnings are synthetic estimates based on average wages for graduates by age, degree level and field. Figures have been adjusted to 2006 dollars and future earnings have been discounted at 3 percent.

Source: IBRC, using data from the Indiana Commission for Higher Education and the National Survey of College Graduates

Female graduates who earn advanced degrees at IUPUI typically earn an estimated \$1.8 million from employment over their lifetimes (see Table 6). Popular master's degrees in education and public and educational administration and management can earn graduates \$1.2 million and \$1.4 million, respectively. Graduates of master's degrees in business administration and management can earn even more at \$1.8 million. Doctoral degree graduates in the most popular allied health and social sciences fields potentially earn over \$1.7 million over their careers. Highest of all are professional degree graduates who have lifetime earning potentials above \$2.4 million.

**Table 6: Estimated Lifetime Earnings for Female Advanced Degree Graduates, IUPUI, 2002-2007**

Degree Type	Field of Study	Average Annual Number of Graduates (2002-2007)	Lifetime Earnings per Person (in thousands)
Master's	Education (except Administrative and Math & Science Education)	133	\$1,242
Master's	Public and Educational Administration and Management	129	1,388
Master's	Business Administration and Management	94	1,848
Master's	Library Science	81	1,150
Master's	Nursing	78	1,626
Master's	Other Fields	193	1,533

Degree Type	Field of Study	Average Annual Number of Graduates (2002-2007)	Lifetime Earnings per Person (in thousands)
Professional	Medicine/Dentistry/Optometry	152	2,759
Professional	Law/Legal Studies	121	2,453
Doctoral	Allied Health Fields (except Nursing)	14	1,765
Doctoral	Social Sciences (except Economics)	10	1,744
Doctoral	Other Fields	6	1,679
<b>Overall</b>		<b>1,010</b>	<b>\$1,783</b>

Note: Numbers may not sum due to rounding. Lifetime earnings are synthetic estimates based on average wages for graduates by age, degree level and field. Figures have been adjusted to 2006 dollars and future earnings have been discounted at 3 percent.

Source: IBRC, using data from the Indiana Commission for Higher Education and the National Survey of College Graduates

Meanwhile, men who recently completed baccalaureate degrees are expected to earn \$1.7 million dollars in lifetime earnings from employment (see Table 7). The most popular degree field—business administration and management—is associated with lifetime earnings of \$1.9 million, even if these graduates do not complete an additional advanced graduate degree. Other popular degree fields are arts and humanities and technology, and these fields allow graduates lifetime earnings of over \$1.5 million and \$1.7 million, respectively.

**Table 7: Estimated Lifetime Earnings for Male Baccalaureate Degree Graduates, IUPUI, 2002-2007**

Field of Study	Average Annual Number of Graduates (2002-2007)	Lifetime Earnings per Person (in thousands)
Business Administration and Management	203	\$1,902
Arts and Humanities (except Music, Visual & Performing Arts)	188	1,553
Technology And Technical Fields (Including Computer Programming)	81	1,731
Computer and Information Science (not programming)	79	\$1,965
Social Sciences (except Economics)	73	1,757
Education (except Administrative and Math & Science Education)	66	1,250
Engineering (except Bio-, Biomedical, Material & Metallurgical)	56	2,046
Communications	46	1,539
Drama / Fine, Visual & Performing Arts	38	1,405
Criminal Justice/Protective Services	27	1,435

Field of Study	Average Annual Number of Graduates (2002-2007)	Lifetime Earnings per Person (in thousands)
Other Fields	98	1,718
<b>Overall</b>	<b>955</b>	<b>\$1,707</b>

Note: Numbers may not sum due to rounding. Lifetime earnings are synthetic estimates based on average wages for graduates by age, degree level and field. Figures have been adjusted to 2006 dollars and future earnings have been discounted at 3 percent.

Source: IBRC, using data from the Indiana Commission for Higher Education and the National Survey of College Graduates

Male graduates who earn advanced degrees at IUPUI typically earn over \$2.5 million from employment over their lifetimes (see Table 8). By far the most popular master's degree field is business administration and management and these graduates can earn \$2.4 million over their careers. Doctoral degree graduates in the most popular biological, agricultural and food sciences field potentially earn \$2.4 million over the life course. Highest of all are professional degree graduates who have lifetime earning potentials above \$2.9 million.

**Table 8: Estimated Lifetime Earnings for Male Advanced Degree Graduates, IUPUI, 2002-2007**

Degree Type	Field of Study	Average Annual Number of Graduates (2002-2007)	Lifetime Earnings per Person (in thousands)
Master's	Business Administration and Management	255	\$2,420
Master's	Biological, Agricultural & Food Sciences	47	1,405
Master's	Public and Educational Administration and Management	42	1,634
Master's	Education (except Administrative and Math & Science Education)	39	1,367
Master's	Allied Health Fields (except Nursing)	36	2,149
Master's	Other Fields	116	1,860
Professional	Medicine/Dentistry/Optometry	206	3,488
Professional	Law/Legal Studies	135	2,903
Doctoral	Biological, Agricultural & Food Sciences	10	1,980
Doctoral	Allied Health Fields (except Nursing)	6	2,383
Doctoral	Other Fields	1	2,111
<b>Overall</b>		<b>892</b>	<b>\$2,515</b>

Note: Numbers may not sum due to rounding. Lifetime earnings are synthetic estimates based on average wages for graduates by age, degree level and field. Figures have been adjusted to 2006 dollars and future earnings have been discounted at 3 percent.

Source: IBRC, using data from the Indiana Commission for Higher Education and the National Survey of College Graduates

The value of obtaining a four-year college degree or higher is highlighted when one compares the difference between the estimated lifetime earnings of IUPUI's baccalaureate and advanced degree graduates with the earnings of associate's degree graduates nationwide (see Table 9). Over the life course, IUPUI's female graduates are expected to make \$494,000 more (or 50 percent) more than associate's degree graduates. Male graduates are expected to make over \$819,000 more (or 64 percent) more than associate's degree graduates.

**Table 9: Difference in Lifetime Earnings between IUPUI Graduates (Baccalaureate Degree or Higher) and U.S. Associate's Degree Graduates**

Category	Women (\$1000s)	Men (\$1000s)
Average Lifetime Earnings for IUPUI Alumni (2002-2007) with Baccalaureate Degrees or Higher	\$1,476	\$2,097
Average Lifetime Earnings for U.S. Associate's Degree Graduates	\$983	\$1,278
<b>Additional Lifetime Earnings Attributable to Higher Degree</b>	<b>\$494</b>	<b>\$819</b>

Note: Numbers may not sum due to rounding. Lifetime earnings are synthetic estimates based on average wages for graduates by age, degree level and field. Figures have been adjusted to 2006 dollars and future earnings have been discounted at 3 percent.

Source: IBRC, using data from the Indiana Commission for Higher Education, National Survey of College Graduates and the U.S. Census Bureau

Combining the additional earnings of baccalaureate and advanced degree graduates of IUPUI (compared to holders of associate's degrees) leads to an estimated \$2.7 billion increase in lifetime earnings related to degrees conferred annually. Of course, not all of this remains in Indiana, and it can't properly be considered an economic impact of the campus in the traditional sense.

Nonetheless, the figure does convey a sense of the incremental value placed on the education received by graduates of IUPUI.

## Adding to Indiana's Talent Pool

Indiana University plays a vital role to the state's economic development efforts by training future leaders and practitioners with skills that are closely aligned with major industries. This report focuses on the high-paying life sciences industry—key among Indiana's industrial initiatives—since the state is among the “nation's top four life sciences leaders” due to its high number and concentration of life sciences-related jobs.<sup>2</sup>

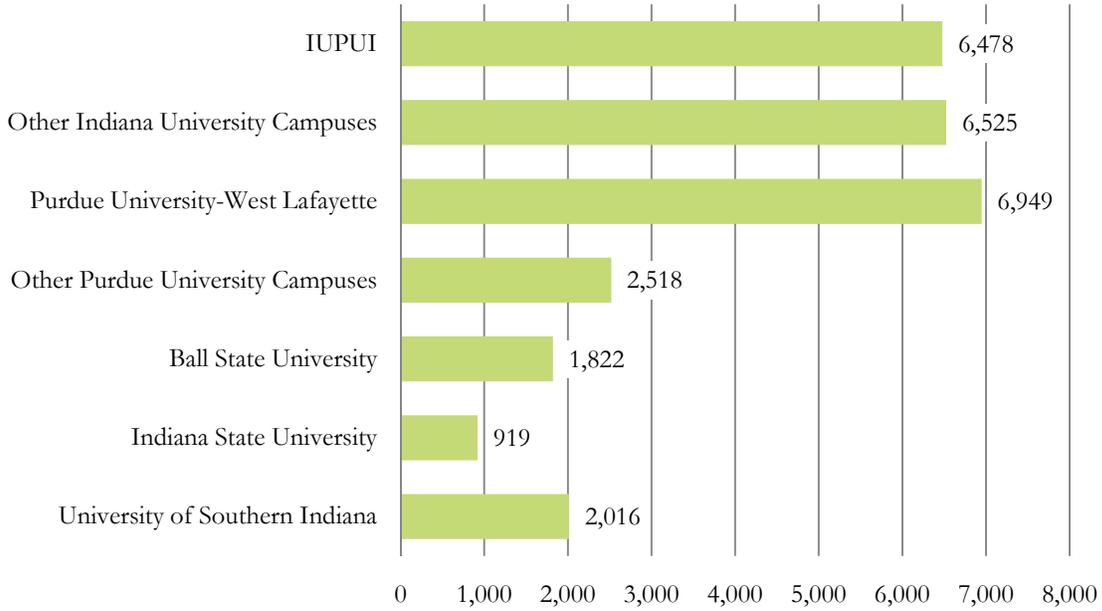
### Life Sciences

IUPUI produced 6,478 life sciences degree graduates for the academic years 2002-2007 (see Figure 12), just about 500 fewer than Purdue University–West Lafayette and almost as many as all other IU campuses combined (6,525). All told, the IU system graduates 13,003 life sciences degrees or 48

<sup>2</sup> This information comes from the Indiana Economic Development Corporation: [www.in.gov/iedc/industry.htm](http://www.in.gov/iedc/industry.htm)

percent of these degrees among Indiana’s four-year public universities—ahead of Purdue University (9,467 or 35 percent) and other institutions (Ball State University, Indiana State University and the University of Southern Indiana) which make up the remaining 17 percent of these degrees.

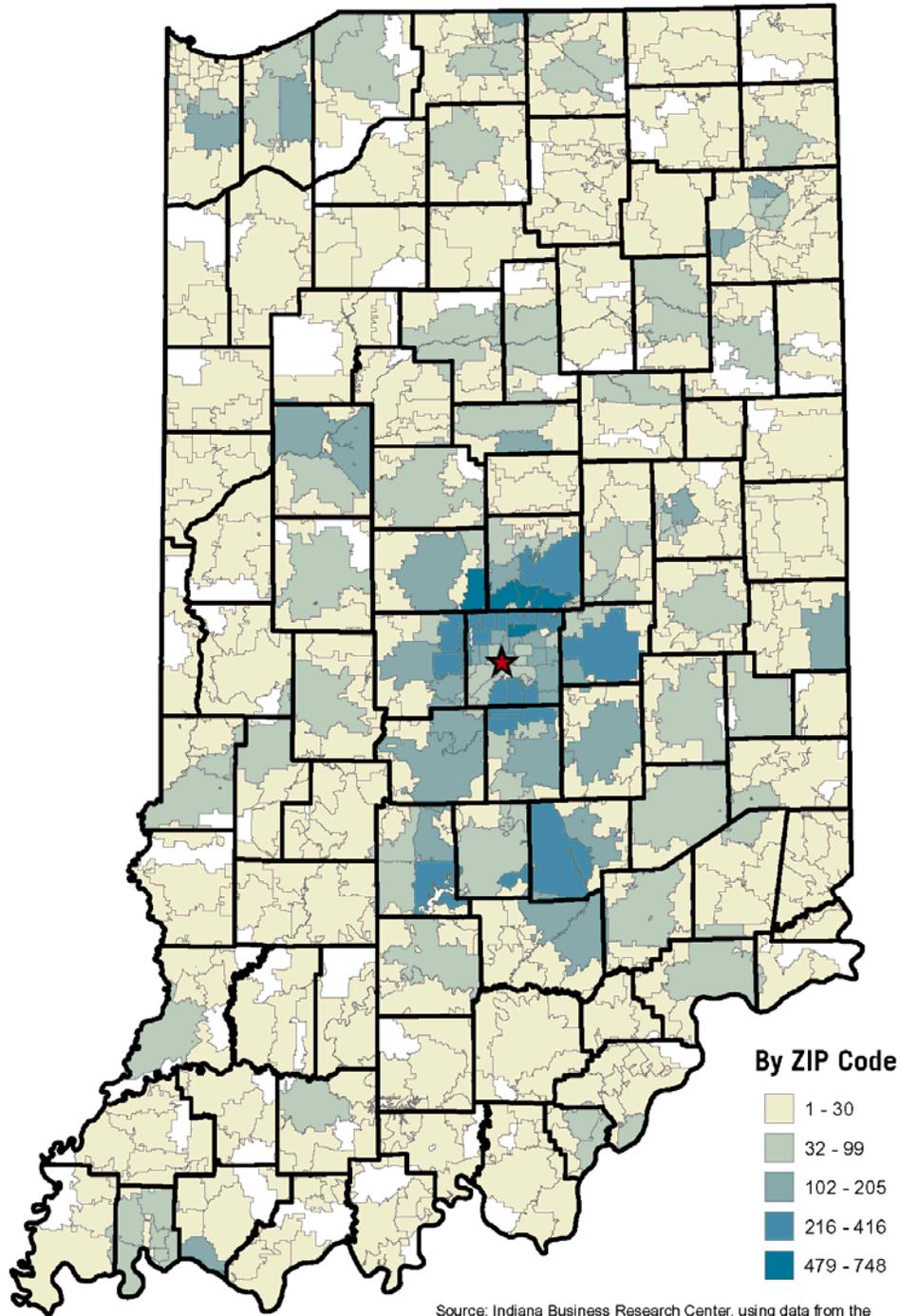
**Figure 12: Life Sciences Degrees Conferred at IUPUI and Selected Indiana Public Universities, 2002-2007**



Source: IBRC, using data from the Indiana Commission for Higher Education

Over half (58 percent) of IUPUI’s life sciences graduates remain in the state. Figure 13 displays their settlement pattern by ZIP code.

Figure 13: Residence of IUPUI Alumni with Life Sciences Degrees, 2008



# University Research and Business Development

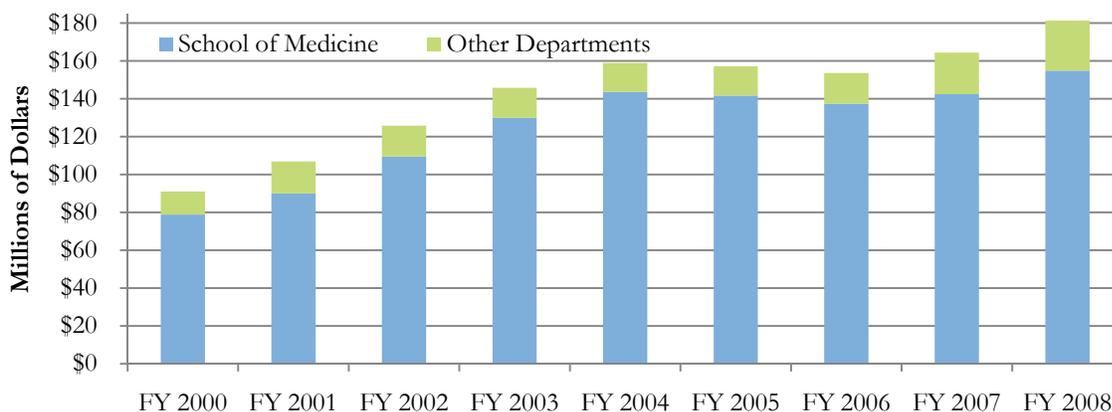
Major research universities such as IU receive several hundred million dollars annually from external sources including the federal government, private foundations, nonprofit organizations and corporations. As home to the IU School of Medicine, the Indianapolis campus accounts for the majority of the University's sponsored research funding (64 percent of the total between 2006 and 2008).<sup>3</sup> This funding supports cutting-edge faculty research that employs professional and support staff as well as students and creates a demand for goods and services in the local economy.

## Research Inputs

IUPUI's sponsored research expenditures totaled \$181 million in fiscal year 2008. This amount has grown at a 9 percent average annual rate and is nearly twice as large as expenditures in 2000 (see Figure 14). The campus's full-time faculty has grown from 1,717 to 2,205 over this same period. Yet even when research expenditures are examined on a dollar per full-time faculty basis, this increase remains substantial. Research expenditures averaged \$82,217 per full-time faculty member in 2008 compared to \$53,016 in 2000—a 5.6 percent average annual rate of growth. The 2000 figure for research expenditures per faculty member becomes \$67,358 when presented in 2008 dollars (using the Consumer Price Index) and brings the inflation-adjusted average annual growth rate to 2.5 percent.

The medical school is the IU system's top recipient of sponsored research funding. Using a three-year average from fiscal years 2006 to 2008, the medical school was responsible for 87 percent of IUPUI's total sponsored research expenditures and 56 percent of IU's system-wide total.

**Figure 14: Annual IUPUI Sponsored Research Expenditures, FY 2000-2008**



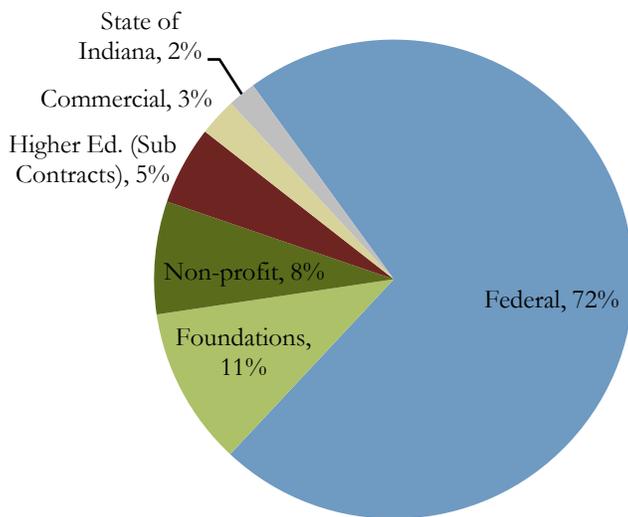
Source: IBRC, using the Executive Reporting Environment (ERE) of the Indiana University Office of Research Administration

<sup>3</sup> University totals do not include the Fort Wayne campus, as it is not managed by Indiana University. More detailed information is available in the full report.

Seventy-two percent of IUPUI’s sponsored research expenditures between 2006 and 2008 were supported by the federal government (see Figure 15). Given the important role that the medical school plays at IUPUI, it is not surprising that the National Institutes of Health accounted for 89 percent of the federally supported research over this period.

Beyond federal contracts and grants, private foundations were the largest sponsors of research, accounting for 11 percent of expenditures. Nonprofit organizations represented 8 percent of research expenditures followed by sub-contracts from other colleges and universities at 5 percent. Only 2 percent of IUPUI’s sponsored research expenditures was funded by the State of Indiana.

**Figure 15: Sponsored Research Expenditures by Funding Source, IUPUI, Three-Year Average, FY 2006-2008**



Source: IBRC, using the Executive Reporting Environment (ERE) of the Indiana University Office of Research Administration

## Research Outputs

Some research efforts at the Indianapolis campus have commercial applications that create income for the university and, in some cases, result in start-up companies that create new jobs. Table 10 details some key metrics of the IU School of Medicine’s technology transfer. The school has had a spike in invention disclosures, license agreements and patent applications in recent years. Furthermore, research at the school has resulted in 54 patents issued between fiscal years 2004 and 2007.

**Table 10: Technology Transfer Outputs of IU School of Medicine Research, FY 2004-2007**

	FY 2004	FY 2005	FY 2006	FY 2007
New Invention Disclosures	30	60	164	94
New Licenses	10	7	29	36
Total New Patent Applications	19	29	27	56
Total New Patents Issued	12	16	10	16

Source: Indiana University Research and Technology Corporation

Table 11 highlights IUPUI's technology transfer activities outside of the medical school. Fiscal year 2007 saw substantial increases in invention disclosures and patent applications while licensing remained consistent with previous years. Non-medical research at IUPUI also produced 10 patented inventions over this period.

**Table 11: Technology Transfer Outputs of IUPUI Non-School of Medicine Research, FY 2004-2007**

	FY 2004	FY 2005	FY 2006	FY 2007
New Invention Disclosures	11	22	36	66
New Licenses	14	5	11	12
Total New Patent Applications	5	3	13	26
Total New Patents Issued	6	2	0	2

Source: Indiana University Research and Technology Corporation

Since 2000, licensed IU technologies have generated 11 start-up companies employing roughly 160 people in the Indianapolis area. As Table 12 illustrates, nine of these firms are engaged in Indiana's burgeoning life sciences industry. The other two start-ups, Angel Learning and BehNeem, are involved in the information technology field. While the creation of start-ups is merely one small byproduct of the true mission of university research, these businesses provide tangible examples of the impact that IU research has on the local economy.

**Table 12: Indianapolis Area Start-Ups Utilizing Licensed IU Technologies, 2000-2008**

Company Name (Fiscal Year Licensed)	Field	Employees
Angel Learning (2000)	Information Technology	>100
Semafore Pharmaceuticals Inc. (2003)	Life Sciences	11
LabRat Software Systems, LLC (2004)	Life Sciences	7
EndGenitor Technologies (2005)	Life Sciences	12
CS Keys, LLC (2006)	Life Sciences	7
ImmuneWorks, LLC (2007)	Life Sciences	5
Marcadia Biotech, Inc. (2007)	Life Sciences	3

Company Name (Fiscal Year Licensed)	Field	Employees
Indiana Nanotech, LLC (2007)	Life Sciences	3
PharmacoPhotonics, LLC (2007)	Life Sciences	3
BehNeem, LLC (2007)	Information Technology	8
Apex Therapeutics, Inc. (2008)	Life Sciences	6

Source: Indiana University Research and Technology Corporation

## Civic Contribution

### Service-Learning<sup>4</sup>

Civic engagement is one of three primary elements of IUPUI's mission, so it is no surprise that the economic impact of IUPUI service-learning is particularly high. The campus has been nationally recognized five times for its community service since 2004—most recently by receiving the 2006 United States Presidential Award.

The Office of Serving Learning (OSL) works to facilitate and support faculty in the creation and maintenance of community service opportunities as part of IUPUI educational programs. At least 105 service-learning courses were offered to students according to preliminary estimates for the academic year 2006-2007. These courses were led by 92 faculty members who created 178 community partnerships. Over 2,600 students served nearly 42,000 hours. A popular service-learning course during this year was “R100: Introduction to Sociology” in which 284 students in the fall and 112 students in the spring contributed a combined 3,026 hours of community service. Students worked at 11 sites including the Damian Center (anti-abuse center for women and children), the Wheeler Mission (hunger and homelessness relief center) and the George Washington Community School.

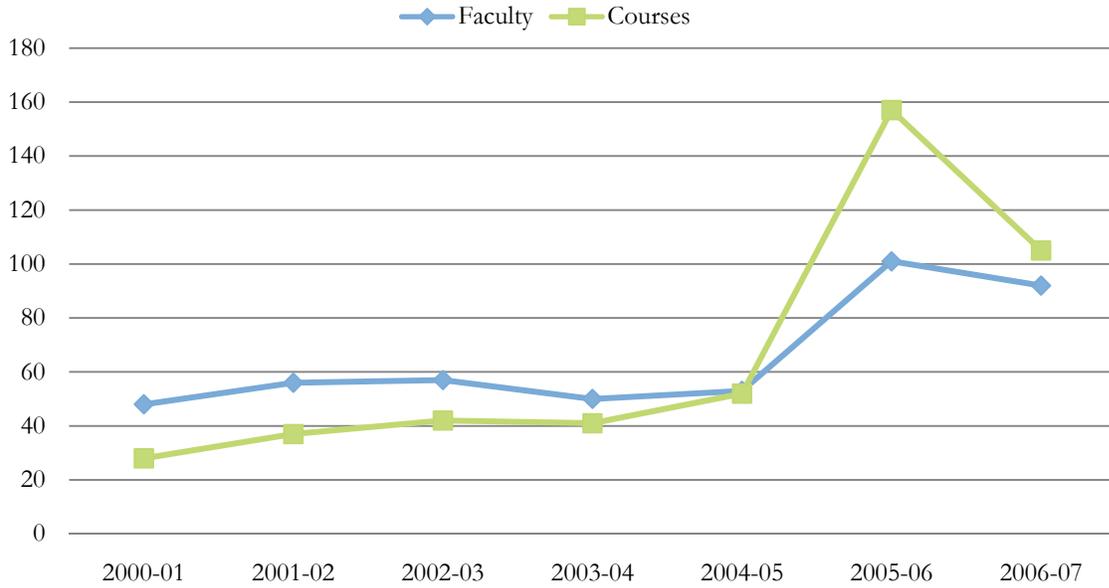
Figure 16 and Figure 17 chart the rising influence of service-learning programs at IUPUI since 2000. The number of faculty and courses involved in service-learning doubled. There was also a tremendous increase in the number of student hours in service, from 13,006 hours in the 2000-2001 school year to a high of 53,648 hours in the 2005-2006 school year.

OSL also coordinates the Sam H. Jones Community Service scholarship program, which grants a wide range of scholarships to support students in their continued work in service to the Indianapolis community. In 2001-2002, 48 scholarship awardees received \$104,250. That support expanded to 313 awardees receiving \$467,864 by the 2006-2007 school year.

<sup>4</sup> Information on hours and type of work for the betterment of the local community comes from the IUPUI Center for Service & Learning Annual Report 2006-2007, courtesy of Kathryn Steinberg (Center for Service & Learning) and from the IUPUI website: <http://www.iupui.edu/civicengagement/>

Overall, the service-learning activities of IUPUI students amounted to a total of 41,800 hours during the 2006-2007 academic year (see Table 13), or \$530,800 in equivalent employment costs. This equates to an economic impact of service-learning at IUPUI of \$387,000.<sup>5</sup>

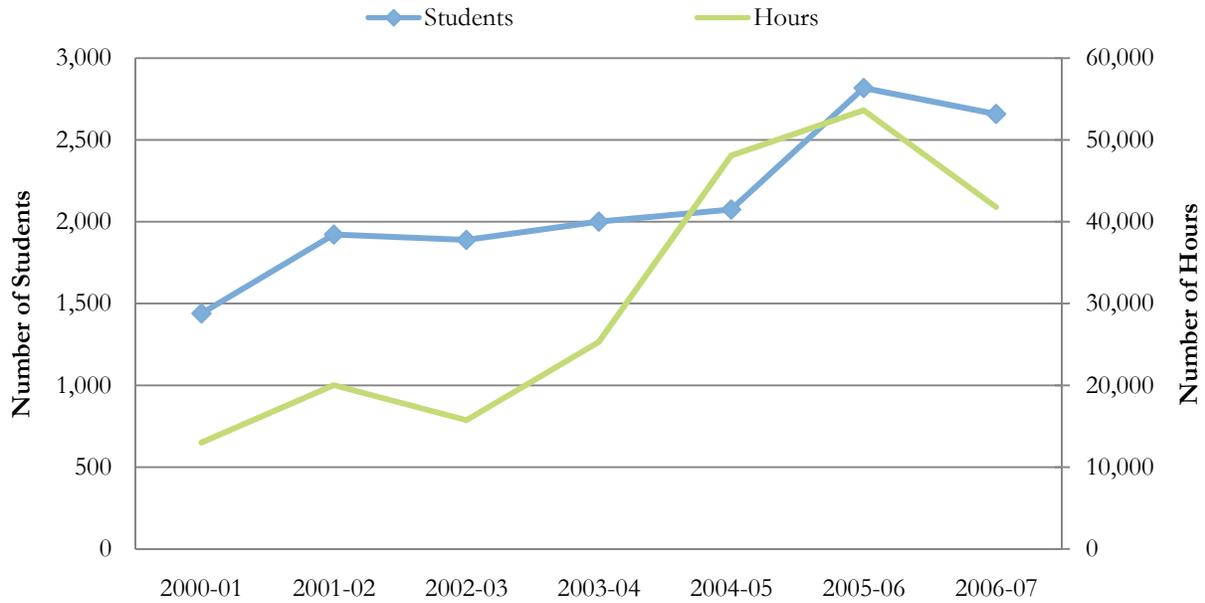
**Figure 16: Number of Service-Learning Faculty and Courses, 2000-2007**



Source: IBRC, using data from the IUPUI Center for Service & Learning

<sup>5</sup> This study accounts for the possibility that not all services provided by volunteers would be funded if the organization, or the organization's clients, had to pay fair market value. The literature on volunteering suggests using a 0.73 factor of proportionality between market price of service and client value. Please see the methodology section in the full IU Impact Study for more information.

**Figure 17: IUPUI Service-Learning Courses, Number of Students and Hours of Service, 2000-2007**



Source: IBRC, using data from the IUPUI Center for Service & Learning

**Table 13: Economic Benefit of Service-Learning, IUPUI, 2006-2007**

School/Department (Volunteer Role)	Reported Hours	Equivalent Hourly Compensation	Equivalent Annual Compensation
Business	3,337	\$9.52	\$31,767
Computer Information Technology (computer support/development)	1,200	18.41	22,093
Dentistry (dental assistant)	3,538	16.19	57,283
Education (child tutor)	3,059	10.43	31,903
Engineering & Technology (building designer)	2,630	20.44	53,747
Herron (marketing designer)	1,670	17.33	28,938
Liberal Arts	12,171	9.52	115,863
Liberal Arts (child tutor)	241	10.43	2,513
Liberal Arts (environmental steward)	609	10.54	6,417
Liberal Arts (mentor)	345	12.63	4,357
Liberal Arts (office assistant)	440	12.10	5,323
Liberal Arts (translation)	998	15.68	15,650
Medicine (medical assistant)	800	13.08	10,466
Nursing (health promotion)	1,230	11.22	13,800
Physical Ed (fitness/recreation aide)	903	9.83	8,880

School/Department (Volunteer Role)	Reported Hours	Equivalent Hourly Compensation	Equivalent Annual Compensation
Physical Ed (physical therapist aide)	200	11.21	2,242
Physical Ed (researcher)	240	17.31	4,154
Science	20	9.52	190
Science (child tutoring)	477	10.43	4,975
Science (environmental steward)	1,368	10.54	14,415
Social Work (child mentoring)	128	12.63	1,616
SPEA	958	9.52	9,120
SPEA (child mentoring)	938	12.63	11,845
SPEA (environmental steward)	172	10.54	1,812
SPEA (research)	4,125	17.31	71,389
Total	41,797		\$530,759
Price-to-Client Value Ratio			73%
<b>Overall Economic Benefit of Service-Learning</b>			<b>\$387,454</b>

Note: Numbers may not sum due to rounding. Equivalent hourly compensation is based on wages and benefits of similar occupations and the overall economic impact assumes a 0.73 market price-to-client value ratio. Please see the methodology section for details.

Source: IBRC, using reported hours of service provided by the IUPUI Center for Service & Learning and wage data from the U.S. Bureau of Labor Statistics

## Volunteering

The Office of Community Service (OCS) promotes a wide range of volunteer activities for students, faculty and staff to engage in throughout the year. Over the 2006-2007 academic year, OCS maintained Internet and notice board listings of volunteer activities, hosted volunteer fairs and coordinated 36 events. Among the larger events were the Dr. Martin Luther King Jr. Day of Service involving 341 IUPUI volunteers, the Day of Caring (208 volunteers) and the series of Jaguars in the Street events (197 volunteers). Through OCS events throughout the year, IUPUI volunteers contributed 7,400 hours of service to Indianapolis and surrounding communities.

In addition, the Office of Neighborhood Partnerships (ONP) strives to build long-term partnerships between IUPUI and surrounding neighborhoods through initiatives such as the Great Indy Neighborhoods Initiative designed to improve quality of life for local residents. ONP also manages the Community Outreach Partnership Center (COPC) initiative which fosters IUPUI's partnership with the Westside Cooperative Organization (WESCO). The COPC makes use of a \$150,000 HUD Office of University Partnerships New Directions grant to increase health promotion and housing accessibility for residents living in neighborhoods west of the IUPUI campus. The COPC initiative also includes service-learning courses, healthy family nights and grants to teachers in the local George Washington Community School.

Some major civic engagement resources at IUPUI are as follows:

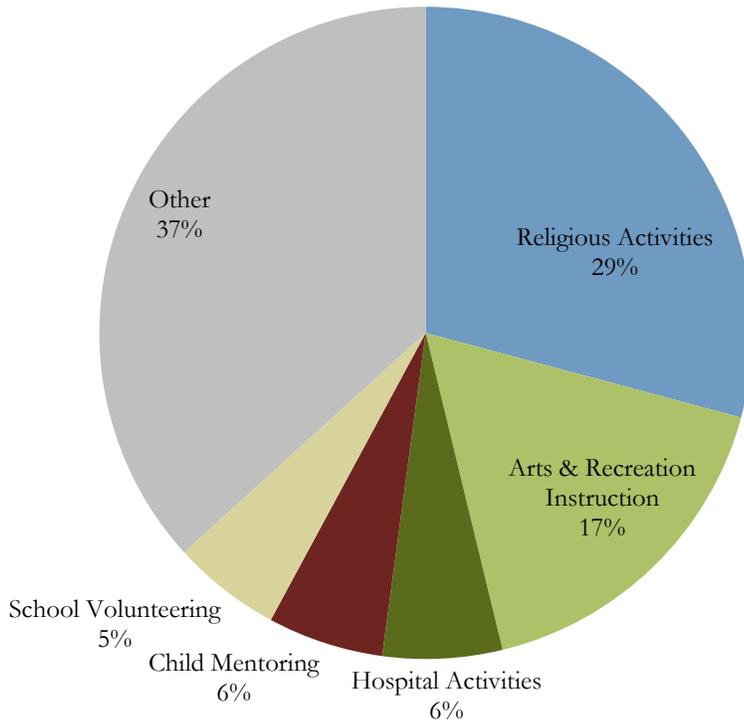
- America Reads/Counts Tutoring
- Backpack Attack School Supply Drive
- Basile Center for Art, Design and Public Life
- Biomechanics and Biomaterials Center
- Center for Earth and Environmental Science
- Center for Service and Learning
- Center for Urban and Multicultural Education
- Center for Urban Policy and the Environment (IUPUI School of Public and Environmental Affairs)
- Center on Philanthropy at Indiana University
- DWD Lifelong Learning Institute (LLI)/ School of Continuing Studies Partnership
- Herron School of Art
- Hoosier Scholars Helping Democracy
- Indiana Campus Compact (ICC)
- Indianapolis Indians Baseball in Education
- Informatics Research Institute
- Jaguars in the Streets
- Jam the Jaguars Bus Food Drive
- Lake Institute on Faith & Giving
- Lugar Center for Renewable Energy
- Office of Multicultural Outreach
- Office of Neighborhood Partnerships
- Political Engagement Project
- School of Medicine
- Solution Center
- Speakers Bureau
- Transportation Active Safety Institute
- United Way Campaign
- United Way Fundraising Drive & Day of Caring
- William S. and Christine S. Hall Center for Law and Health

IUPUI students volunteered an average of 56.1 hours over the 2006-2007 academic year according to the IU Student Survey of full-time students. Figure 18 shows that the most popular volunteer activities were religious activities and arts and recreation instruction for these full-time students.<sup>6</sup> While hospital activities are not popular forms of volunteer service for most other IU campuses, these activities were the third most popular among IUPUI students.

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<sup>6</sup> Full-time students were analyzed and reported because they more likely reflect volunteering that would not have occurred “but for” the presence of the university. In addition, this also implies that the economic benefit figures for volunteering are conservative.

**Figure 18: Volunteer Time Spent by Activity for IUPUI Students, 2006-2007**



Source: IBRC, using volunteer data from the IU Student Survey 2008

Extrapolating the student survey results to the entire full-time student body, IUPUI students' service totaled over 974,000 volunteer hours. This service was conducted overwhelmingly within the campus region, namely Boone, Hamilton, Hancock, Hendricks, Johnson, Marion, Morgan and Shelby counties. Table 14 summarizes the volunteer services of IUPUI students. A conservative estimate of volunteering economic impact counts only those hours provided by students from outside the campus region, as many would argue that students from within the region would have volunteered anyway. The resulting conservative estimate of net economic benefit to the region is over \$2.3 million.

**Table 14: Economic Benefit of Student Volunteering Activities, IUPUI, 2006-2007**

Volunteer Role	Total Annual Hours	Percent of Hours in Campus Region	Equivalent Hourly Compensation	Equivalent Annual Compensation
Religious Activities	262,491	77.5	\$11.97	\$2,434,168
Arts & Recreation Instruction	173,799	83.1	9.74	1,405,994
Hospital Activities	124,106	80.6	12.78	1,278,158
Child Mentoring	86,679	75.6	12.63	827,820
School Volunteering	63,217	77.0	10.43	507,797
Child Tutoring	51,077	80.7	10.43	429,616
Animal Care	53,718	78.7	9.22	389,832

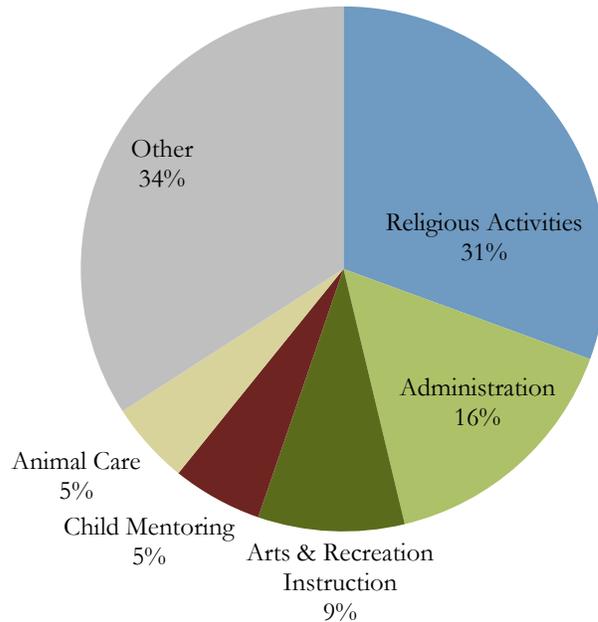
Volunteer Role	Total Annual Hours	Percent of Hours in Campus Region	Equivalent Hourly Compensation	Equivalent Annual Compensation
All Other Activity	39,565	79.5	9.52	299,607
General Office Assistance	26,293	88.0	12.10	279,902
Administration	17,235	84.2	14.31	207,640
Poverty Relief	26,230	79.0	9.22	190,859
Adult Mentoring	13,084	86.7	14.35	162,720
Media	11,448	87.5	13.05	130,726
Neighborhood Cleanup/ Housing Development	10,882	85.0	10.54	97,482
Camp Volunteering	11,448	60.0	9.74	66,877
Adult Tutoring	2,894	70.4	17.11	34,837
<b>Total</b>	<b>974,166</b>			<b>\$8,744,034</b>
Percent of Students Not from Campus Region				37.49%
Price-to-Client Value Ratio				73%
<b>Overall Economic Benefit of Student Volunteering</b>				<b>\$2,393,041</b>

Note: Numbers may not sum due to rounding. Equivalent hourly compensation is based on wages and benefits of similar occupations. The overall economic impact accounts only for students who did not previously reside in the campus region and assumes a 0.73 market price-to-client value ratio. Table reports full-time students. In the fall of 2007, the number of full-time students was 17,360. Please see the methodology section for details.

Source: IBRC, using volunteer data from the IU Student Survey 2008, student origin data from the Indiana University Office of University Planning, Institutional Research and Accountability and wage data from the U.S. Bureau of Labor Statistics

IUPUI employees are doing their volunteering part too. The IU Faculty and Staff Survey conducted in early 2008 revealed that the survey participants volunteered an average of 36.5 hours over the 2006-2007 academic year. Figure 19 shows the most popular volunteer activities among IUPUI employees. While religious activities were the most popular, 16 percent of volunteer service was for administration in many organizations throughout the Indianapolis metropolitan area.

**Figure 19: Volunteer Time Spent by Activity, IUPUI Faculty and Staff, 2006-2007**



Source: IBRC, using volunteer data from the IU Faculty and Staff Survey 2008

After extrapolating the faculty and staff survey results to all full-time employees, IUPUI employee volunteer service totaled over 247,000 hours. These hours were conducted overwhelmingly within the campus region. Table 15 summarizes the hours of volunteer service estimated for IUPUI employees. Taking a conservative approach, IBRC analysis assumed that “but for” the presence of IUPUI, the full-time faculty would not live and work in the region and as a result, would not volunteer in central Indiana.<sup>7</sup> While this is likely true of professional staff as well, the university employee data did not allow breaking out professional staff from other staff for whom the “but for” argument would not hold. (The survey revealed that a majority of staff were not as economically tied to the university as were the full-time faculty.) As a result, the conservative estimate of economic benefits counts only full-time faculty volunteering and is worth nearly \$630,000 to the region. The upper bound of the estimate, on the other hand, includes all employees and totals over \$2.6 million.

**Table 15: Economic Benefit of Employee Volunteering Activities, IUPUI, 2006-07**

Volunteer Role	Total Annual Hours	Percent of Hours in Campus Region	Equivalent Hourly Compensation	Equivalent Annual Compensation
Religious Activities	75,596	94.2	\$11.97	\$851,931
Administration	38,720	94.4	14.31	522,642
All Other Activity	46,418	95.3	9.52	421,099
Arts & Recreation Instruction	22,264	98.4	9.74	213,316

<sup>7</sup> While for most campuses, claiming only the economic impact of faculty volunteer hours is a safe way to avoid inflating the value of employee volunteer services, this is not as easily done for IUPUI because there are several other four-year degree granting institutions in the Indianapolis area.

Volunteer Role	Total Annual Hours	Percent of Hours in Campus Region	Equivalent Hourly Compensation	Equivalent Annual Compensation
Child Mentoring	13,712	97.0	12.63	167,995
Animal Care	12,556	95.1	9.22	110,050
School Volunteering	8,764	95.5	10.43	87,267
Poverty Relief	8,587	96.2	9.22	76,112
Hospital Activities	4,978	100.0	12.78	63,615
Adult Mentoring	3,492	96.3	14.35	48,242
General Office Assistance	3,698	95.5	12.10	42,699
Child Tutoring	2,597	94.7	10.43	25,650
Neighborhood Cleanup/ Housing Development	2,587	93.5	10.54	25,497
Media	1,375	97.2	13.05	17,449
Campaigning	1,483	97.7	8.56	12,396
Camp Volunteering	320	78.8	9.74	2,455
<b>Total</b>	<b>247,147</b>			<b>\$2,688,415</b>
Percent of Employees Who Are Faculty				32.09%
Price-to-Client Value Ratio				73%
<b>Overall Economic Benefit of Employee Volunteering</b>				<b>\$629,806</b>

Note: Numbers may not sum due to rounding. Equivalent hourly compensation is based on wages and benefits of similar occupations. The overall economic impact accounts only for faculty and assumes a 0.73 market price-to-client value ratio. Table reports full-time employees. In the fall of 2007, the number of full-time faculty and staff was 6,781. Please see the methodology section for details.

Source: IBRC, using volunteer data from the IU Faculty and Staff Survey 2008, student origin data from the Indiana University Office of University Planning, Institutional Research and Accountability and wage data from the U.S. Bureau of Labor Statistics

## Charitable Contributions

IUPUI also “gives back” to the region through student and employee donations to charities. Table 16 shows that full-time IUPUI students donated an average of \$91 over the 2006-2007 academic year. Extrapolating the survey average to the entire full-time student body, students at IUPUI gave nearly \$1.6 million. Sixty-two percent of these funds were received by organizations within the eight-county region.

**Table 16: Economic Benefit of Student Charitable Contributions, IUPUI, 2006-2007**

Region of Charitable Giving	Percentage of Total	Contribution per Person
Inside Campus Region	62.2%	\$56
Other Parts of Indiana	20.2%	\$18

Region of Charitable Giving	Percentage of Total	Contribution per Person
Outside of Indiana	17.6%	\$16
Total Contribution per Person		\$91
Total Contribution of All Students		\$1,571,155
<b>Contribution within Campus Region</b>		<b>\$977,730</b>

Note: Table reports full-time students. In the fall of 2007, the number of full-time students was 17,361.  
Source: IBRC, using charitable contribution data from the IU Student Survey 2008

Full-time employees contributed too. Based on the IU Faculty and Staff Survey, they donated an average of \$719 over the 2006-2007 academic year. Multiplying this average by the number of full-time faculty and staff, IUPUI employees gave nearly \$4.9 million. Table 17 shows that more than two-thirds of these funds were donated to charities operating in the region.

**Table 17: Economic Benefit of Employee Charitable Contributions, IUPUI, 2006-2007**

Region of Charitable Giving	Percentage of Total	Contribution per Person
Inside Campus Region	67.9%	\$488
Other Parts of Indiana	17.2%	\$124
Outside of Indiana	14.9%	\$107
Total Contribution per Person		\$719
Total Contribution of All Employees		\$4,872,784
<b>Contribution within Campus Region</b>		<b>\$3,309,108</b>

Note: Table reports full-time employees. In the fall of 2007, the number of full-time faculty and staff was 6,781.  
Source: IBRC, using charitable contribution data from the IU Faculty and Staff Survey 2008

## Resources for the Community

Members of the public are welcome to use numerous facilities and resources on the IUPUI campus.

### Arts and Culture

Through collaboration on the Indianapolis Museum of Art Community Project, IUPUI is a major player in the effort to make digital art and related resources more accessible to the public. This project has already benefited several local K-12 schools, public libraries, museums and a broad range of cultural organizations. In addition, other art and cultural resources at IUPUI include the following:

- Basile Center for Art, Design and Public Life
- Cultural Arts Gallery
- Herron Galleries
- Herron School of Art
- Campus Center

- Museum Studies Program
- Music Academy
- National Art Museum of Sport
- School of Music

## Library Services

Besides students, faculty and staff, 3,613 members of the public used the University Library and the four IUPUI branch libraries during the 2006-2007 academic year. Community members borrowed 9,150 books for a benefit valued at nearly \$68,000. IBRC analysts used the estimated value of \$7.42 per loaned book based on the methodology used in the report, *The Economic Impact of Libraries in Indiana*.<sup>8</sup> In addition, members of the public are free to use the library’s audiovisual resources and computer services by requesting a free network ID.

## Other Resources

Table 18 catalogs six types of resources available to members of the public.

**Table 18: Community Resources Offered by IUPUI**

Community Resource	Adult/ Continuing Education	K-12 Education Resources	Economic Development/ Business Leadership	Physical & Mental Health Treatment	Event Hosting/ Shopping Facilities	Recreation Facilities & Sporting Events
America Reads/Counts Tutoring		X				
Backpack Attack School Supply Drive		X				
Basile Center for Art, Design and Public Life			X			
Biomechanics and Biomaterials Center	X	X	X			
Campus Center					X	
Center for Earth and Environmental Science	X	X				
Center for Economic Education		X				
Center for Service and Learning	X	X	X			
Center for Urban and Multicultural Education	X	X				
Center on Philanthropy at Indiana University	X		X			

<sup>8</sup> Indiana Business Research Center. 2007. “The Economic Impact of Libraries in Indiana.” Available online at: [www.ibrc.indiana.edu/studies/EconomicImpactOfLibraries\\_2007.pdf](http://www.ibrc.indiana.edu/studies/EconomicImpactOfLibraries_2007.pdf)

Community Resource	Adult/ Continuing Education	K-12 Education Resources	Economic Development/ Business Leadership	Physical & Mental Health Treatment	Event Hosting/ Shopping Facilities	Recreation Facilities & Sporting Events
College Mentors for Kids		X				
Community Learning Network	X					
Dentistry SEAL Mobile				X		
DWD Lifelong Learning Institute (LLI)/ School of Continuing Studies Partnership	X	X	X			
Herron School of Art	X	X	X		X	
Indiana Business Research Center			X			
Indiana Campus Compact (ICC)						
Indiana Center for Intercultural Communication	X		X		X	
Indianapolis Indians Baseball in Education		X				
Informatics Research Institute	X	X	X			
Intercollegiate Athletics - <i>Jaguars</i>						X
School of Public and Environmental Affairs - Center for Urban Policy and the Environment			X			
Lugar Center for Renewable Energy	X	X	X			
Mini Medical School	X					
Nursing MOM Mobile				X		
Office of Multicultural Outreach		X				
Office of Neighborhood Partnerships		X	X			
Polis Center			X			
Regenstrief Institute, Inc.	X					
School of Education		X				

Community Resource	Adult/ Continuing Education	K-12 Education Resources	Economic Development/ Business Leadership	Physical & Mental Health Treatment	Event Hosting/ Shopping Facilities	Recreation Facilities & Sporting Events
School of Education - Urban Center for the Advancement of STEM Education (UCASE)		X				
School of Medicine	X	X	X	X	X	
School of Medicine - Center for Bioethics			X			
School of Medicine - Office of Medical Service Learning				X		
School of Medicine - Department of Public Health				X		
School of Music at IUPUI		X				
School of Science		X				
Solution Center	X		X			
Sports Complex - IU Natatorium, Michael A. Carroll Stadium & Tennis Center		X			X	X
Survey Research Center at IUPUI			X			
Transportation Active Safety Institute	X	X	X			
University College		X				
University Information Technology Services	X					
University Library					X	
University Place					X	
William S. and Christine S. Hall Center for Law and Health	X					

Note: This list does not include the civic engagement or arts and cultural resources discussed earlier in the report.  
 Source: Indiana Business Research Center, with input from campus administrators

# The Economic Footprint of the University

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## Methodology

The Indiana Business Research Center analyzed the economic significance of IUPUI on the university's campus region. The analysis measures the economic effect of IUPUI compensation and purchasing expenditures, together with the spending of students and visitors that the institution attracts. The IBRC used the IMPLAN economic analysis tool, developed by University of Minnesota researchers over 20 years ago and in use by over 1,500 clients today. It is a standard input-output model that calculates the economic ripple effects created by the purchases of the university, the compensation of its faculty and staff, and the collateral expenditures of students and visitors attending IUPUI-related events.<sup>9</sup> Users of the model's results should be aware that the figures are estimates, not a precise accounting of the effects of IUPUI on the regional economy.

## Principal Findings

- The total economic footprint of IUPUI on its campus region amounts to \$2.5 billion annually.
- This economic activity generates approximately \$86.4 million in state and local taxes.
- Student spending and its ripple effect are estimated to total \$547 million and account for approximately 3,710 jobs.
- IUPUI faculty and staff spending, together with university direct purchases and construction projects, result in ripple effects of approximately \$290.1 million in additional economic activity and accounts for approximately 2,240 jobs.

Table 19 presents the relative economic effects of six major spending categories and their ripple effects. The ratio of the ripple effect to the direct effect depends on several factors, but two important factors are the size of the model region—the larger, the greater the ripple effects—and the degree to which the region is able to supply the goods and services demanded by the consumers and businesses of the region.

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<sup>9</sup> See the methodology section of the full report for a detailed discussion on the conceptual difference between economic impact and economic footprint.

**Table 19: Estimated Economic Footprint of IUPUI, 2006-2007**

<b>Economic Output Effects of University</b>	<b>Direct Effects</b> (in millions)	<b>Ripple Effects</b> (in millions)	<b>Total Footprint</b> (in millions)
Faculty and Staff Compensation	\$515.0	\$184.6	<b>\$699.6</b>
University Purchases of Goods and Services	285.8	80.1	<b>365.9</b>
University Construction	56.4	25.4	<b>81.8</b>
Student Expenditures	400.2	147.2	<b>547.4</b>
Medical School Supplemental Expenditures	439.4	335.6	<b>775.0</b>
Visitor Expenditures Attributed to IUPUI Events	2.6	1.3	<b>3.9</b>
<b>TOTAL Effect on Economic Output</b>	<b>\$1,699.4</b>	<b>\$774.2</b>	<b>\$2,473.6</b>

Source: IBRC, using IMPLAN results based on IPEDS financial data reported by universities to the National Center for Education Statistics; Office of Financial Aid; IU Student Survey 2008; and Office of Planning, Institutional Research and Accountability

Table 20 presents the employment impact of IUPUI. In addition to the 7,051 persons employed by IUPUI,<sup>10</sup> the spending by university faculty, staff and students, together with university purchasing, account for another 16,970 jobs statewide. The reader should be aware that the various types of jobs, and their associated wages and salaries, do not all have the same ripple effects. While the model estimates that IUPUI creates demand for higher-paying jobs such as physicians to serve faculty and staff, a majority of jobs are in the lower-paying service sector.

**Table 20: Estimated Employment Footprint of IUPUI, 2006-2007**

<b>Employment Effects of University</b>	<b>Direct Effects</b>	<b>Ripple Effects</b>	<b>Total Footprint</b>
Faculty and Staff	2,660	1,310	<b>3,970</b>
University Purchases of Goods and Services	1,110	710	<b>1,820</b>
University Construction	340	220	<b>560</b>
Student Expenditures	2,460	1,250	<b>3,710</b>
Medical School Supplemental Expenditures	3,950	2,910	<b>6,860</b>
Visitor Expenditures Attributed to IUPUI Events	40	10	<b>50</b>
<b>TOTAL Effect on Employment</b>	<b>10,560</b>	<b>6,410</b>	<b>16,970</b>

Source: IBRC, using IMPLAN model results

## Economic Injections and Leakages

In many ways, measuring the economic impact of a business or institution is an exercise in keeping track of good money (monetary flows into a region), bad money (monetary flows out of a region)

<sup>10</sup> Based on IBRC's full-time equivalent calculations using payroll data received from the Office of Planning, Institutional Research and Accountability.

and neutral money (transactions that re-circulate money within a region). Another way to view good money is an injection into a regional economy. Tourism is the classic example. Another way to view bad money is a leakage from a regional economy. Purchasing oil from overseas may be a good example of this concept. The presence of a business or institution that helps to stop leakages, or retain economic activity, is said to have an import substitution effect.

In recent years, state universities—in their desire to advance their case for support to state legislatures—have highlighted the fact that universities and students attract visitors and those visitors bring money, good money, to their region. In this way, institutions have augmented their reported economic footprint. While there is nothing analytically wrong with counting the economic injections, if one adds the injections, one must also subtract the leakages from the region to obtain a net flow of good versus bad money. Most university impact reports do not subtract leakages.

In an attempt to conduct a balanced and consistent analysis of injections and leakages associated with student visitors, the IBRC included questions in the 2008 Student Survey to measure the frequency and spending associated with visitors from outside the region and IU student travel to destinations out of the campus region. According to the survey results, IUPUI students travel out of the campus region longer and spend more money per day in the process than those who come to Indianapolis to visit IUPUI students. In other words, this is not an advantageous calculation.

On the other hand, out-of-region visitors who attend sporting events, cultural events or conferences do provide injections to the state economy. These visitors and their economic injections are enumerated in the “visitor expenditures attributed to IUPUI events” category. Because these visitors are not tied to students or employees, their spending is assumed to be net injections. That said, the percentage of those visitors coming from out of the campus region is relatively small.

Following the lead of the economic impact study conducted for the Jacob’s School of Music in 2007, the research team assumed that 17 percent of visitors who attend all types of events—cultural, sporting or otherwise—were from outside the campus region. The 17 percent figure was used for all campus regions for the sake of consistency. (The assumption is probably the most heroic for the Bloomington campus because the state of Indiana is the campus region.) Each out-of-region visitor is assumed to spend on average \$44 per visitor day (in 2008 dollars) on hotels, meals and shopping. Event tickets and refreshment sales, as well as payments for conference meals and lodging, are included in the university “auxiliary enterprise” expenditures; as a result, including them in the visitor-day spending total would be double counting.

As one can see in Table 19 and Table 20, the portion of the economic footprint associated with university events is relatively small compared to the university’s operating budget and student spending on housing, foods and incidentals. Just the same, this is an important expenditure category and future university impact studies would be well served to have more accurate and detailed data on how many event attendees originate from outside the region as well as how much an event attendee spends locally on lodging, meals and shopping.

## Explaining the Data and the Results

In this report, the term “ripple effects” is used to describe the cascading effects of a purchase by either institutions (such as a university or business) or consumers in a regional or state economy. Direct expenditures, or direct effects, are re-circulated in the economy when recipients of the first round of spending “re-spend” a portion of their income with other businesses and individuals within

each region. A purchase at a retail store by a consumer, for example, is the end of a chain of economic transactions. Working backward, a purchase of a gallon of milk at the local grocery store provides some income to the grocery worker and some profit to the store owner. If the milk was produced locally, it also provides income to the dairy farmer, the local large-animal veterinarian and a local agricultural supply store, to name a few. Those incomes are re-circulated in the local economy as those people spend their income on auto repair, groceries or home repair. Hence, that \$5 for the gallon of milk can be multiplied to \$7.50 or \$8.00 depending on how much of the money is retained and re-spent locally.

The IUPUI campus region for the economic impact analysis is comprised of Marion County and the counties that circle Marion County excluding Madison County. Thus, the economic effects were measured for the campus region as a whole, in contrast to measuring the impact of IUPUI on Marion County alone. As stated in the full IU Impact Report, the IBRC researchers attempted to rigorously apply the “but for” principle as expounded by Siegfried, Sanderson and McHenry.<sup>11</sup> The research team assumed, because of IUPUI’s multiple roles from medical school to commuter campus, that a certain percentage of students would attend university elsewhere if opportunities at IUPUI did not exist. On the other hand, a large portion of students would *not* seek opportunities elsewhere. In other words, the “but for” argument in the case of IUPUI is not an all or nothing calculation. This analysis assumed that single students living at home would not leave the service area and their spending would remain in the region. The balance of the students was assumed to be lost to another Indiana university (out of the region) or out-of-state institution. (Recall the analysis is for the IUPUI campus region only.) Another way to look at it is that, “but for” IUPUI’s existence, the region would lose a significant volume of economic activity.

The treatment of state support is a thorny issue in measuring economic impact. The most conservative approach would be to remove the state appropriation portion from the IUPUI operating budget because these funds would either be returned to Indiana taxpayers or redirected to other regional programs and projects. In other words, the state support wouldn’t disappear if IUPUI went away, it would go somewhere else in the state economy, in contrast to the research and development funding, the student tuition and endowment revenues. The IBRC analysts kept all the types of funds in the calculation and note that these state appropriations are “neutral;” that is, they don’t represent injections into the regional economy nor do they represent leakages, or potential leakages, from the regional economy. As a result, the IBRC uses the term economic footprint to include all categories of monetary flows—injections, retention and recirculation. Economic *impact*, in the strict sense, would measure only the effects of monetary injections and retention.

The sum of all the direct effects will not add up to the IUPUI total operating budget as reported by the Integrated Postsecondary Education Data System (IPEDS) for several reasons:

1. To assess the effects of spending by faculty and staff, the analysis must reduce total compensation to reflect the leakages associated with income taxes, payroll taxes and savings.
2. Scholarships and student financial assistance are a reduction in revenues, even though they are treated as an expense in the university books.

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<sup>11</sup> John A. Siegfried, Allen R. Sanderson, Peter McHenry. “The economic impact of colleges and universities,” *Economics of Education Review* 26 (2007): 546–558.

3. The IMPLAN model calculates the effects of current spending, not the consumption of fixed capital, i.e., depreciation.
4. Construction expenditures can vary greatly over time. As a result, a five-year average of construction expenditures was used.

There was no double counting of student spending for on-campus housing and meals. Student expenditures for on-campus housing and meals are captured within university expenditures. For the relevant number of students, on-campus room and board spending was removed from the impact calculation of student spending.

### A Note about the Economic Footprint of the IU School of Medicine

Conducting an analysis of the economic footprint of the IU School of Medicine (IUSM) is not straightforward. Many of the medical school's expenditures on goods, services and compensation are recorded in the accounts of IUPUI. Those expenditures recorded in the medical school accounts, and their economic ripple effects, are included in Table 19 under the "Faculty and Staff Compensation" and the "University Purchases of Goods and Services" categories. There are additional expenditures that are not recorded in the medical school accounts. There are complementary medical practice plans and services associated with the medical school that employ faculty and staff and purchase goods and services. For the fiscal year 2006-2007, the expenditures connected to these complementary activities totaled \$439.4 million. These direct effects created an additional \$335.6 million in economic ripple effects and 2,900 jobs in the IUPUI campus region. Table 19 and Table 20 present these figures under the category "Medical School Supplemental Expenditures."

The combined expenditures of the IUSM—both the complementary accounts and the medical school accounts—totaled 834.5 million in the 2006-2007 fiscal year. These combined expenditures created an additional \$637.4 million in economic ripple effects and 5,500 jobs in the IUPUI campus region. These expenditures created direct and ripple economic effects that are estimated to generate \$58.7 million in state and local taxes.

The expenditure values and the estimated economic ripple effects presented in this report are considerably lower than those in a 2005 report prepared for Association of American Medical Colleges (AAMC). There could be several reasons for this discrepancy. There may be different modeling assumptions. For example, the IBRC employed the conservative "but for" perspective that tends to dampen, rather than amplify, impact estimates. As presented in the methodology portion of the full IU Impact Study, this perspective was adopted to mollify critics of economic impact studies and to produce conservative and defensible impact estimates. In addition, the 2005 AAMC study reported statewide effects, while this study focused on the IUPUI campus region. As mentioned earlier, the larger the region used for analysis, the larger the value of economic ripple effects. Probably the greatest source of discrepancy is the base expenditure data. This study used expenditure figures from LCME Part I-A Annual Financial Questionnaire on Medical School Financing—Schedule A—of the Liaison Committee on Medical Education.

While the AAMC 2005 study may differ with respect to the base expenditure data and impact estimation methodology, the AAMC report does present additional types of economic benefits that were outside the scope of this study. For example, the AAMC reports that out-of-state visitors who came to see patients in AAMC-Member Medical Schools and Teaching Hospitals injected into

Indiana \$31.5 million in spending. While it is legitimate to include this *type* of spending on hotels, meals and gifts by visitors from out-of-state as an economic impact, the units of analysis differ between the AAMC study and the study conducted by the IBRC. (For example, the region of analysis for the AAMC study is the entire state, while the IBRC uses the IUPUI campus region.) In addition, there was no way to verify the veracity of the figures in the AAMC study because conducting a survey on the origins of Medical Schools visitors and their spending patterns was outside the scope of this study. As a result, the IBRC analysts were not able to stand behind the \$31.5 million estimate and did not include it in the total economic footprint.

## Conclusion

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IUPUI makes a vital contribution to central Indiana. This study presents a comprehensive, innovative and conservative assessment of the economic impact that IUPUI has on its region. IBRC researchers used many of the standard tools and methods to measure IUPUI's impact. The economic effects are clear. Through the spending of its employees and purchases of goods and services, IUPUI creates economic ripples through the region. This analysis estimated that the direct and ripple effects of university expenditures accounts for \$2.5 billion of the economic activity in central Indiana.

Students, faculty and staff also “give back” to the community by volunteering and contributing to local charities. This study is one of few that chronicles and measures the economic benefits of the community and civic engagement. Information related to IUPUI's civic engagement was gathered through an extensive student and staff survey that collected data on a range of topics including spending patterns, volunteer activities and charitable contributions. The civic engagement dollar figure, which totals approximately \$3.4 million, was estimated by applying to total service-learning and volunteer hours the equivalent wages of occupations performing similar roles.

Assigning a dollar value to a university is a challenging task. Many university impact studies have overestimated the economic impact and overlooked, or underestimated, the other types of economic and cultural contributions that the institution makes to the region it serves. Clearly, the total dollar-and-cents contribution of IUPUI as reported in this study is but one dimension of IUPUI's total impact. This study attempted to provide a balanced view by expanding the scope and understanding of the contributions—tangible economic contributions as well as intangible contributions—that a university makes.