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The Economic Value of Iowa's Regent Universities

EXECUTIVE SUMMARY



IOWA'S regent universities¹ create value in many ways. The universities play a key role in helping students increase their employability and achieve their individual potential. The universities facilitate new research and company developments and draw visitors and students to the state, generating new dollars and opportunities for Iowa. They provide students with the education, training, and skills they need to have fulfilling and prosperous careers. Furthermore, the universities are places for students to meet new people, increase their self-confidence, and promote their overall health and well-being.

*The value of Iowa's regent universities influences both the **lives of students** and the **state economy**.*

Iowa's regent universities influence both the lives of students and the state economy. The universities support a variety of industries in Iowa, serve state businesses, and benefit society as a whole in Iowa from an expanded economy and improved quality of life. The benefits created by Iowa's regent universities even extend to the state government through increased tax revenues and public sector savings.

This study measures the economic impacts created by Iowa's regent universities on the business community and the benefits the universities generate in return for the investments made by their key stakeholder groups—students, taxpayers, and society. The following two analyses are presented:



Economic impact analysis



Investment analysis

All results reflect employee, student, and financial data, provided by the universities, for fiscal year (FY) 2017-18. Impacts on the Iowa economy are reported under the economic impact analysis and are measured in terms of added income. The returns on investment to students, taxpayers, and society in Iowa are reported under the investment analysis.

¹ Iowa's regent universities consist of the following universities: Iowa State University of Science and Technology, the University of Iowa, and the University of Northern Iowa.



Economic impact analysis

Iowa's regent universities promote economic growth in Iowa through their direct expenditures and the resulting expenditures of visitors, students, and state businesses. The universities serve as employers and buyers of goods and services for their day-to-day, construction, university hospital, clinic, and research operations. Numerous start-up and spin-off companies have formed as a result of programs and knowledge at the universities, and extension, outreach, and volunteer services contribute to the community. The universities' activities attract visitors and students from outside Iowa, whose expenditures benefit state vendors. In addition, the universities are primary sources of higher education to Iowa residents and suppliers of trained workers to state industries, enhancing overall productivity in the state workforce.

Operations spending impact



Iowa's regent universities add economic value to Iowa as employers of state residents and large-scale buyers of goods and services. In FY 2017-18, the universities employed 19,905 full-time and part-time faculty and staff (excluding hospital, clinic, and research employees), 100% of whom lived in Iowa. Total payroll for these employees was \$1.7 billion² (excluding payroll from hospital, clinic, and research employees), much of which was spent in the state for groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the universities spent \$504.7 million on day-to-day expenses related to facilities, supplies, and professional services (excluding construction, hospital, clinic, and research expenditures).

The universities' day-to-day operations spending added \$1.9 billion in income to the state during the analysis year. This figure represents the universities' payroll, the multiplier effects generated by the in-state spending of the universities and their employees, and a downward adjustment to account for funding that the universities received from state sources. The \$1.9 billion in added income is equivalent to supporting 21,776 jobs in the state.

Construction spending impact



The universities commissioned contractors to build or renovate facilities in FY 2017-18. The quick infusion of income and jobs that occurred in the state economy as a result of this construction spending is considered short-term due to the one-time nature of such projects. Nonetheless, the universities' construction spending had a substantial impact

² Includes royalty payments to inventors related to the universities that live in the state.

IMPACTS CREATED BY IOWA'S
REGENT UNIVERSITIES IN FY 2017-18*



\$1.9 billion
Operations Spending impact



\$132.7 million
Construction Spending Impact



\$1.5 billion
University Hospital & Clinic
Spending Impact



\$730 million
Research Spending Impact



\$1 billion
Economic Development Impact



\$38.1 million
Visitor Spending Impact



\$232.9 million
Student Spending Impact



\$6.2 billion
Alumni Impact



\$11.8 billion
TOTAL IMPACT

- OR -

149,980
JOBS SUPPORTED

* This table excludes the positive impacts of the universities' extension, outreach, & volunteer activities.

on the state economy in FY 2017-18, equal to \$132.7 million in added income and equivalent to supporting 2,025 jobs.

University hospital & clinic spending impact



The University of Iowa Hospitals & Clinics (UIHC), including the Iowa River Landing, University of Iowa Stead Family Children’s Hospital, and pharmacy locations, would not exist without the university. UIHC provides a hands-on learning and research environment for students and employs thousands of workers. Although broader health-related impacts are outside the scope of this analysis, UIHC is known for providing quality patient care.

In FY 2017-18, UIHC spent over \$745 million on payroll and \$760 million on other non-pay expenditures to support their operations. These expenditures added a net impact of \$1.5 billion in added income to the state. This is equivalent to supporting 21,276 jobs.

Research spending impact



Research activities impact the economy by employing people and requiring the purchase of equipment and other supplies and services. Over the last four years, the universities received 1,126 invention disclosures, filed 460 new patent applications, and produced 527 licenses. Total license income over the same four-year time period grew from \$4.7 million in FY 2014-15 to \$6.1 million in FY 2017-18, an approximate \$1.4 million increase.

In FY 2017-18, the universities spent \$411.5 million on payroll to support research activities. This, along with \$465.3 million in other research spending, created a net total of \$730 million in added income for the state economy. This added income is equivalent to supporting 9,682 jobs.

IOWA’S REGENT UNIVERSITIES’ RESEARCH DEVELOPMENTS

	Inventions	Patents	Licenses
2014-15	288	128	150
2015-16	305	132	126
2016-17	234	109	147
2017-18	299	91	104
Total	1,126	460	527

Source: Iowa’s regent universities.

Value of extension and outreach



Extension and outreach activities strengthen communities and their local economies by enhancing leadership structures, broadening engagement, teaching best practices, and providing hands-on

assistance. Communities are empowered to shape their own futures through research, education, community engagement, economic development, and community planning and design. Over the years, the extension and outreach offices have helped more than 13,000 companies and organizations across the state. The offices have also helped tens of thousands of Iowa farmers. Due to the specific nature of these extension and outreach activities, Emsi does not attempt to measure an impact. With that said, the value that these extension and outreach activities offer for state and local communities should be acknowledged.

Economic development impact



The universities create an exceptional environment that fosters innovation and entrepreneurship, evidenced by the number of start-up and spin-off companies related to the universities and companies that have grown in the state with the support of the universities. Start-up companies, created specifically to license and commercialize the universities' technology or knowledge, have a strong and clearly defined link to the universities. Spin-off companies, created and fostered through the universities' programs or faculty and alumni, have a clear but weaker link to the universities. In addition, companies that benefited from the universities' Small Business Development Centers (SBDCs), Advance Iowa (a University of Northern Iowa consulting program), and Iowa State University's Center for Industrial Research and Service (CIRAS) are included under spin-off companies.³

In FY 2017-18, start-up and spin-off companies related to Iowa's regent universities added \$1 billion⁴ in income to the Iowa economy, which is equivalent to supporting 14,575 jobs. Of this added income, \$99.8 million was due to the start-up companies, with the remainder due to spin-off companies.

Visitor spending impact



Hundreds of thousands of visitors from outside the state were attracted to the universities during the analysis year to attend commencement, sports events, and other activities sponsored by the universities. While in the state, visitors spent money for lodging, food, transportation, and other personal expenses. The off-campus expenditures of the universities' out-of-state visitors generated a net impact of \$38.1 million in added income for the state economy in FY 2017-18. This \$38.1 million in added income is equivalent to supporting 1,081 jobs.

³ The number of employees included is limited to the employees hired as a direct result of the spin-off companies and the growth in employees at companies supported by the SBDCs, Advance Iowa, and CIRAS.

⁴ To maintain an acceptable level of data reliability, this impact is limited to those companies that were created in the last five years. It is therefore conservative.

Extension advances the pork industry

Iowa State University extension specialists with the Iowa Pork Industry Center partnered with the Iowa Pork Producers Association, and other allied industry leaders to develop and deliver hands-on ventilation training and education to pork producers throughout the state. A portable trailer demonstrating state-of-the-art technology was transported across the state to deliver seven training workshops. A total of 171 producers participated in the workshops. The number of animals influenced by those attending the workshop was over 63 million pigs and over 1.2 million sows.

Advance Iowa helps Horizon Group with hiring

Like many Iowa companies, the Horizon Group has experienced turnover at a higher rate than is acceptable. Thanks to assistance from Advance Iowa, a University of Northern Iowa-based business consulting program, the Horizon Group discovered a better process of conducting the initial interview. They decided to recruit current employees from the production area to do the initial meet and greets with applicants. These recruits were then given some issues to watch for and report back to the head of human resources. The results from this new process of interviewing people has produced tremendous results on reducing turnover and saving those in management time hiring and training new hires.

Value of volunteerism



Beyond positively impacting the state through the activities occurring at the universities, such as research, the universities also directly impact the state economy through their facilitation and support of student and employee volunteer activities. Volunteers are an important part of any society because they positively impact those less fortunate. In FY 2017-18 alone, 45,047 student and employee volunteers supported non-profit organizations and causes across the state. These students and employees volunteered 2.3 million hours of their time. Their volunteer activities added \$54.2 million in value⁵ for the state and local communities. The impact of volunteerism is not measured in this analysis; however, the value they offer should not be overlooked.

Student spending impact



Around 40% of students attending the universities originated from outside the state in FY 2017-18. While some of these students continued to live outside the state, many relocated to Iowa to attend the universities. These students may not have come to the state if the universities did not exist. In addition, some in-state students, referred to as retained students, would have left Iowa if not for the existence of Iowa's regent universities. While attending the universities, these relocated and retained students spent money on groceries, accommodation, transportation, and other household expenses. This spending generated \$232.9 million in added income for the state economy in FY 2017-18, which supported 5,485 jobs in Iowa.

Alumni impact



The education and training the universities provide for state residents has the greatest impact. Since the universities were established, students have studied at them and entered the state workforce with greater knowledge and new skills. Today, hundreds of thousands of former students of Iowa's regent universities are employed in Iowa. As a result of their Iowa public university educations, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2017-18, alumni of Iowa's regent universities generated \$6.2 billion in added income for the state economy, which is equivalent to supporting 74,079 jobs.

Total impact

Iowa's regent universities added \$11.8 billion in income to the Iowa economy during the analysis year, equal to the sum of the operations, construction,

Providing dental care for the underserved

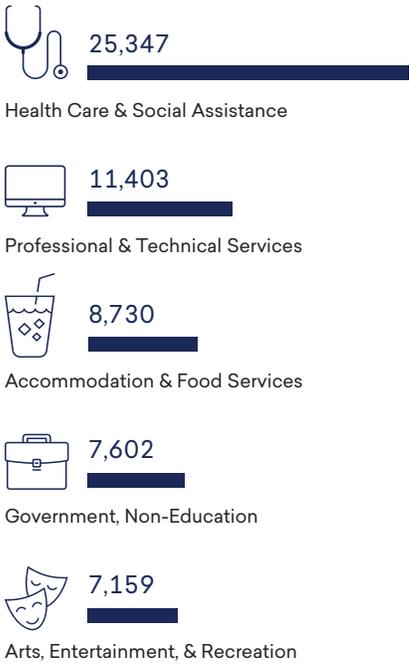
In each of the last six years, University of Iowa's College of Dentistry has been awarded the Iowa Primary Care Association's "Underserved Champion Award" for its work with Iowans who need dental care. For many years, faculty and staff have regularly volunteered at the Iowa Mission of Mercy, an annual two-day community dental clinic where dental professionals and general volunteers donate their time to provide free dental care. Over 50 faculty and staff and between 100 and 150 students participate. They also conduct broader outreach work and annually organize a charity trip to provide services in Mexico.

⁵ Value per volunteer hour per state provided by Independent Sector. See https://independentsector.org/resource/vovt_details/.

UIHC, and research spending impacts, the economic development impact, the visitor and student spending impacts, and the alumni impact. For context, the \$11.8 billion impact was equal to approximately 6.2% of the total gross state product (GSP) of Iowa. This contribution that the universities provided on their own is nearly as large as the entire Health Care & Social Assistance industry in the state. Note that the \$11.8 billion impact does not include the value that the universities' extension, outreach, and volunteer activities are adding to the state and local communities.

The total impact of Iowa's regent universities can also be expressed in terms of jobs supported. The \$11.8 billion impact supported 149,980 state jobs, using the jobs-to-sales ratios specific to each industry in the state. This means that one out of every 14 jobs in Iowa is supported by the activities of the universities and their students. In addition, the \$11.8 billion, or 149,980 supported jobs, stemmed from different industry sectors. Among non-education industry sectors, the universities' spending and alumni in the Health Care & Social Assistance industry sector supported 25,347 jobs in FY 2017-18. These are impacts that would not have been generated without the universities' presence in Iowa.

IMPACT OF IOWA'S REGENT UNIVERSITIES BY INDUSTRY (JOBS SUPPORTED)



One out of every 14 jobs in Iowa is supported by the activities of the universities and their students.



©: University of Northern Iowa



Investment analysis

An investment analysis evaluates the costs associated with a proposed venture against its expected benefits. If the benefits outweigh the costs, then the investment is financially worthwhile. The analysis presented here considers Iowa's regent universities as an investment from the perspectives of students, taxpayers, and society in Iowa.

Student perspective



The universities reported a fall enrollment of 80,066 students in 2017. Expanding to the annual unduplicated headcount across FY 2017-18, Iowa's regent universities served almost 90,000 students.

In order to attend the universities, the students paid for tuition, fees, books, and supplies. They also took out loans and will incur interest on those loans. Additionally, students gave up money they would have otherwise earned had they been working instead of attending college. The total investment made by the universities' students in FY 2017-18 amounted to a present value of \$1.8 billion, equal to \$919.8 million in out-of-pocket expenses (including future principal and interest on student loans) and \$904.7 million in forgone time and money.

In return for their investment, Iowa's regent universities' students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average bachelor's degree graduate from FY 2017-18 will see an increase in earnings of \$22,500 each year compared to a person with a high school diploma or equivalent working in Iowa. Over a working lifetime, the benefits of the bachelor's degree over a high school diploma will amount to an undiscounted value of \$1 million in higher earnings per graduate. The present value of the cumulative higher future earnings that the universities' FY 2017-18 students will receive over their working careers is \$6.8 billion.

STUDENTS SEE A HIGH RATE OF RETURN FOR THEIR INVESTMENT IN IOWA'S REGENT UNIVERSITIES



14.4%

Average annual return for Iowa's regent universities' students



9.9%

Stock market 30-year average annual return

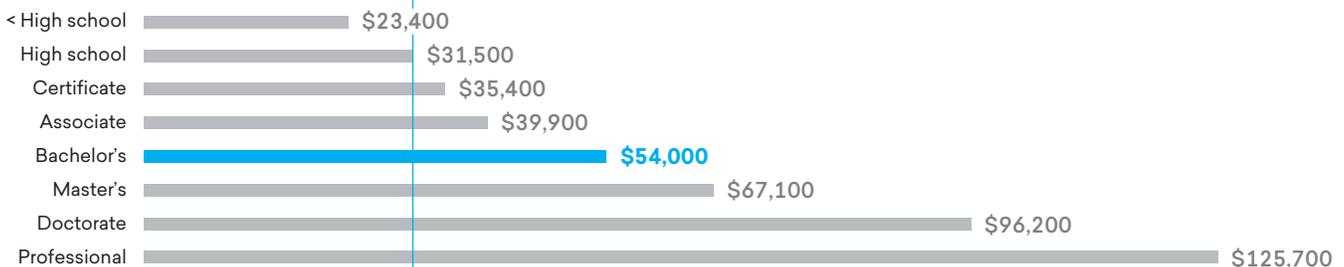


0.8%

Interest earned on savings account (National Rate Cap)

Source: Forbes' S&P 500, 1989-2018. FDIC.gov, 6-2019.

The average bachelor's degree graduate from Iowa's regent universities will see an increase in earnings of **\$22,500** each year compared to a person with a high school diploma or equivalent working in Iowa.



Source: Emsi employment data.

The students' benefit-cost ratio is 3.7. In other words, for every dollar students invest in their education at the universities, in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$3.70 in higher future earnings. Annually, the students' investment in the universities has an average annual internal rate of return of 14.4%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 9.9%.

Taxpayer perspective⁶



Iowa's regent universities generate more in tax revenue than they take. These benefits to taxpayers consist primarily of taxes that the state government will collect from the added revenue created in the state. As the universities' students earn more, they will make higher tax payments throughout their working lives. Students' employers will also make higher tax payments as they increase their output and purchases of goods and services. By the end of the FY 2017-18 students' working lives, the state government will have collected a present value of \$1.8 billion in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of the universities' students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. Students' university educations will generate savings in three main categories: 1) healthcare, 2) crime, and 3) income assistance. Improved health will lower students' demand for national health care services. In addition, students will be less likely to interact with the criminal justice system, resulting in a reduced demand for law enforcement and victim costs. The universities' students will be more employable, so their reduced demand for income assistance such as welfare and unemployment benefits will benefit taxpayers. For a list of study references, contact the Board of Regents, State of Iowa for a copy of the main report. Altogether, the present value of the benefits associated with an education will generate \$287 million in savings to state taxpayers.

Total taxpayer benefits amount to \$2.1 billion, the present value sum of the added taxes and public sector savings. Taxpayer costs are \$710.9 million, equal to the amount of state government funding Iowa's regent universities received in FY 2017-18. These benefits and costs yield a benefit-cost ratio of 2.9. This means that for every dollar of public money invested in Iowa's regent universities in

*For every dollar of public money invested in Iowa's regent universities, taxpayers will receive a cumulative value of **\$2.90** over the course of the students' working lives.*



STUDENT PERSPECTIVE

\$6.8 billion
Present value benefits

\$1.8 billion
Present value costs

\$5 billion
Net present value

Benefit-cost ratio	Rate of return
3.7	14.4%



TAXPAYER PERSPECTIVE

\$2.1 billion
Present value benefits

\$710.9 million
Present value costs

\$1.4 billion
Net present value

Benefit-cost ratio	Rate of return
2.9	7.9%



SOCIAL PERSPECTIVE

\$21.2 billion
Present value benefits

\$4.7 billion
Present value costs

\$16.5 billion
Net present value

Benefit-cost ratio	Rate of return
4.5	n/a*

* The rate of return is not reported for the social perspective because the beneficiaries of the investment are not necessarily the same as the original investors.

⁶ In order to focus on the costs and benefits that are more directly related to the universities, University of Iowa's Hospitals & Clinics operational costs and benefits were removed from the taxpayer and social perspectives.

FY 2017-18, taxpayers will receive a cumulative value of \$2.90 over the course of the students' working lives. The average annual internal rate of return for taxpayers is 7.9%, which compares favorably to other long-term investments in the public and private sectors.

Social perspective



Society as a whole in Iowa benefits from the presence of Iowa's regent universities in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to higher student earnings and increased business output, which raise economic prosperity in Iowa.

Benefits to society also consist of the savings generated by the improved lifestyles of the universities' students. As discussed in the previous section, education is statistically correlated with a variety of lifestyle changes that generate social savings. Note that these costs are avoided by the consumers but are distinct from the costs avoided by the taxpayers outlined above. Healthcare savings include avoided medical costs associated with smoking, alcohol dependence, obesity, drug abuse, and depression. Savings related to crime include reduced security expenditures and insurance administration, lower victim costs, and reduced expenditures by the criminal justice system. Income assistance savings include reduced welfare and unemployment claims. For a list of study references, contact the Board of Regents, State of Iowa for a copy of the main report.

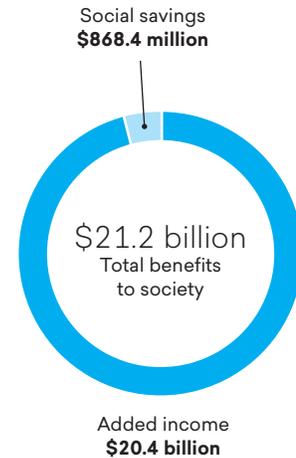
Altogether, the social benefits of Iowa's regent universities equal a present value of \$21.2 billion. These benefits include \$20.4 billion in added income through students' increased lifetime earnings and increased business output, as well as \$868.4 million in social savings related to health, crime, and income assistance in Iowa. People in Iowa invested a present value total of \$4.7 billion in Iowa's regent universities in FY 2017-18. The cost includes all the universities' expenditures and student costs.

The benefit-cost ratio for society is 4.5, equal to the \$21.2 billion in benefits divided by the \$4.7 billion in costs. In other words, for every dollar invested in Iowa's regent universities, people in Iowa will receive a cumulative value of \$4.50 in benefits. The benefits of this investment will occur for as long as the universities' FY 2017-18 students remain employed in the state workforce.

Summary of investment analysis results

The results of the analysis demonstrate that Iowa's regent universities are a strong investment for all three major stakeholder groups—students, taxpayers, and society. As shown, students receive a great return for their investments in an education at the universities. At the same time, taxpayers' investment in Iowa's regent universities returns more to government budgets than it costs and creates a wide range of social benefits throughout Iowa.

SOCIAL BENEFITS IN IOWA FROM IOWA'S REGENT UNIVERSITIES



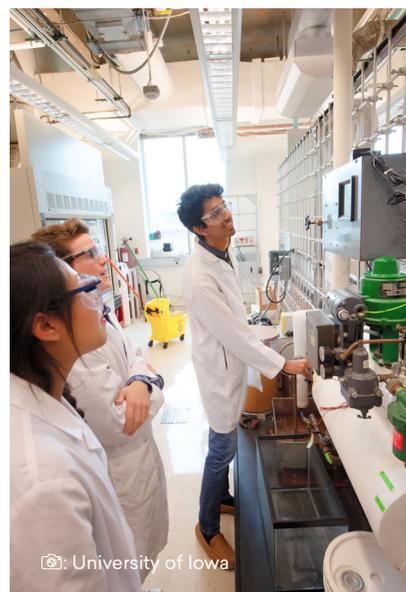
Conclusion

The results of this study demonstrate that Iowa's regent universities create value from multiple perspectives. The universities benefit state businesses by increasing consumer spending in the state and supplying a steady flow of qualified, trained workers to the workforce. Iowa's regent universities enrich the lives of students by raising their lifetime earnings and helping them achieve their individual potential. The universities benefit state taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, Iowa's regent universities benefit society as a whole in Iowa by creating a more prosperous economy and generating a variety of savings through the improved lifestyles of students.

About the study

Data and assumptions used in the study are based on several sources, including the FY 2017-18 academic and financial reports from the universities, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Emsi's Multi-Regional Social Accounting Matrix model, and a variety of studies and surveys relating education to social behavior. The study applies a conservative methodology and follows standard practice using only the most recognized indicators of economic impact and investment effectiveness. For a full description of the data and approach used in the study, please contact the Board of Regents, State of Iowa for a copy of the main report.

*The results of this study demonstrate that Iowa's regent universities create value from **multiple perspectives**.*



Emsi is a labor market analytics firm that integrates data from a wide variety of sources to serve professionals in higher education, economic development, workforce development, talent acquisition, and site selection. Emsi is a leading provider of economic impact studies and labor market data to educational institutions in the U.S. and internationally. Since 2000, Emsi has completed over 2,000 economic impact studies for institutions across three countries. For more information about Emsi's products and services, visit www.economicmodeling.com.