

IOWA

Executive Summary

JANUARY 2023



The Economic Value of the University of Iowa

THE UNIVERSITY OF IOWA (UI) creates value in many ways. The university plays a key role in helping students increase their employability and achieve their individual potential. The university facilitates new research, supports innovation and economic development, and also draws visitors and students to the state, generating new dollars and opportunities for Iowa. UI outreach programs is actively engaged in providing research-based healthcare, education, and information to improve lives of Iowans and grow state businesses. The UI provides students with the education, training, and skills they need to have fulfilling and prosperous careers. Its student and employee volunteers support the state economy through the output and employment generated by state businesses and organizations. Furthermore, the UI is a place for students to meet new people, increase their self-confidence, and promote their overall health and well-being.

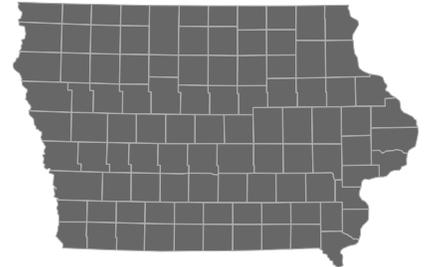
The UI influences both the lives of its students and the state economy. The university supports a variety of industries in Iowa, serves state businesses, and benefits society as a whole in Iowa from an expanded economy and improved quality of life. Additionally, the benefits created by the UI extend to the state and local government through increased tax revenues and public sector savings.

This study measures the economic impacts created by the UI on the business community and the benefits the university generates in return for the investments made by its 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 university, for fiscal year (FY) 2021-22. 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.



IOWA

The UI influences both the **lives of its students** and the **state economy**.





The UI promotes economic growth in Iowa through its direct expenditures and the resulting expenditures of visitors, students, and state businesses. The university serves as an employer and buyer of goods and services for its day-to-day, construction, the UI Hospitals & Clinics, and research operations. UI's outreach programs help state and local businesses and organizations succeed as well as improve the lives of Iowans. Numerous start-up and spin-off companies have formed as a result of programs and knowledge at the UI. The university's reputation and activities attract visitors and students from outside Iowa, whose expenditures benefit state vendors. The UI encourages its students and employees to volunteer in the community, helping businesses and organizations grow. In addition, the UI is one of the largest sources of higher education to Iowa residents and a supplier of trained workers to state industries, enhancing overall productivity in the state workforce.

Operations spending impact



The UI adds economic value to Iowa as an employer of state residents and a large-scale buyer of goods and services. In FY 2021-22, the university employed 16,658 full-time and part-time faculty and staff (including graduate assistants and student employees but excluding UI Hospitals & Clinics and research employees), 97% of whom lived in Iowa. Total payroll at the UI was \$1.1 billion¹ (excluding payroll from UI Hospitals & Clinics and research employees), much of which was spent in the state for household and living expenses, including groceries, mortgage and rent payments, and dining out. In addition, the university spent \$266.6 million on day-to-day expenses related to facilities, supplies, and professional services (excluding construction, UI Hospitals & Clinics, and research expenditures).

The UI's day-to-day operations spending added \$1.4 billion in income to the state during the analysis year. This figure represents the university's payroll, the multiplier effects generated by the in-state spending of the university and its employees, and a downward adjustment to account for funding that the university received from state sources. The \$1.4 billion in added income is equivalent to supporting 19,440 jobs in the state.

Construction spending impact



The UI invests in construction each year to maintain its facilities, create additional capacities, and meet its growing educational demands. While the amount varies from year to year, these quick infusions of income and jobs have a

¹ Includes royalty payments to inventors related to the UI who still live in Iowa.



substantial impact on the state economy. In FY 2021-22, the UI's construction spending generated \$72.3 million in added income, which is equivalent to supporting 961 jobs.

UI Hospitals and Clinics spending impact

 The UI Hospitals & Clinics, including the Iowa River Landing, University of Iowa Stead Family Children's Hospital, and pharmacy locations, would not exist without the university. The UI Hospitals & Clinics provide 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, the UI Hospitals & Clinics is known for providing quality patient care.

In FY 2021-22, the UI spent over \$2.1 billion on hospital and clinic operations. These expenditures added a net impact of \$2 billion in added income to the state. This is equivalent to supporting 25,673 jobs.

Digital Diagnostics helps identify diseases of thousands of patients

Digital Diagnostics has raised \$130 million in venture capital making it one of the most successful recent commercial outgrowths of UI research. In April 2018, Digital Diagnostics (formerly known as IDx) became the first company to ever receive Food and Drug Administration (FDA) clearance for an Artificial Intelligence (AI) diagnostic platform that makes a diagnosis without physician input at the point-of-care. This achievement did not happen overnight—it was the culmination of decades of research by founder Dr. Michael Abramoff on automated image analysis, combined with decades of research on how clinicians diagnose disease. Digital Diagnostics is in use at over 20 health systems, and its customers have tested thousands of patients and identified hundreds of patients with disease who were previously undiagnosed.

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 UI received 382 invention disclosures, filed 617 new patent applications, and produced 180 licenses.

UI research developments

Fiscal year	Inventions	Patents	Licenses
2018-19	83	160	48
2019-20	95	146	37
2020-21	101	123	47
2021-22	103	188	48
Total	382	617	180

Source: The UI.



*This table excludes the positive impacts of the UI's outreach activities.



In FY 2020–21, the UI spent \$242.7 million on payroll to support research activities. This, along with \$133.6 million in other research spending,² created a net total of \$369.5 million in added income for the state economy. This added income is equivalent to supporting 5,002 jobs. Note that at the time of this study, FY 2021–22 research expenditure data were being verified, so FY 2020–21 research expenditure data were used as the reference. Actual FY 2021–22 research awards are equal to or higher than FY 2020–21.

UI student reduces herbicide costs for farmers

Founded by UI Computer Science student, Holly Bennett, Spayer Mods allows farmers to reduce their herbicide costs by 80% by ensuring the herbicide is only applied to weeds. A retrofit kit detects weeds in crop fields and applies herbicide only when the weed passes underneath the sprayer. Spayer Mods won the Summer 2021 Hawkeye Startup Accelerator Pitch Competition sponsored by the UI's John Pappajohn Entrepreneurial Center.

Value of outreach programs



The UI impacts Iowa beyond its principal mission of educating students and training the next generation of professionals. As the home of Iowa's premier hospital, the UI and its faculty, staff, and students provide healthcare to tens of thousands of Iowans each year. Hospitals and healthcare providers across Iowa send their most complicated cases to the UI to take advantage of the specialized care their patients can only receive there. Mobile programs and other clinics take preventative care into Iowa communities. The State Hygienic Lab, operated at the UI, provides critical services for every mother and child born in Iowa while also detecting disease and environmental pollution. Other capabilities resident at the UI are working to improve Iowa's response to floods, assisting communities in tackling their unique challenges, and providing expertise and support to Iowa's entrepreneurs.

Economic development impact³



The UI creates an exceptional environment that fosters innovation and entrepreneurship, evidenced by the number of UI start-up and spin-off companies related to the university and companies that have grown in the state with the support of the UI. Start-up companies—created specifically to license and commercialize UI technology or knowledge—have a strong and clearly defined link to the UI. Spin-off companies—created and fostered through university programs by faculty or students—have a clear but less direct link to the UI. In addition, companies that benefited from the UI's Small Business Development Center (SBDC) are included in the analysis as spin-off companies.⁴

² Excludes indirect costs because indirect costs are not necessarily spent during the analysis year.

³ The following three impacts (economic development, visitor spending, and volunteerism) are based off data that are not tracked regularly or captured completely. Thus, the results that follow are conservative.

⁴ 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 SBDC.



In FY 2021-22, UI start-up and spin-off companies added \$551.4 million in income to the Iowa economy, which is equivalent to supporting 6,626 jobs. Of this added income, \$75.5 million was due to the start-up companies, with the remainder due to spin-off companies.⁵

Visitor spending impact



Hundreds of thousands of visitors from outside the state were attracted to the UI during the analysis year to attend commencement, sports events, and other activities sponsored by the university. While in the state, visitors spent money for lodging, food, transportation, and other personal expenses. The off-campus expenditures of the university's out-of-state visitors generated a net impact of \$91.2 million in added income for the state economy in FY 2021-22. This \$91.2 million in added income is equivalent to supporting 2,164 jobs.

Student spending impact



Around 41% of students attending the UI originated from outside the state in FY 2021-22, and most of these students relocated to Iowa to attend the UI. These students may not have come to the state if the university did not exist. In addition, some in-state students, referred to as retained students, would have left Iowa if not for the existence of the UI. While attending the university, these relocated and retained students spent money on groceries, accommodation, transportation, and other household expenses. This spending generated \$64.2 million in added income for the state economy in FY 2021-22, which supported 1,218 jobs in Iowa.

Volunteerism impact



The UI encourages its students and employees to volunteer in Iowa, where they can work with businesses and organizations to help meet their goals. The work of these student and employee volunteers allows businesses and organizations to grow, increasing

their output and impacting the economy at large. Using the value per volunteer hour for Iowa as provided by the Independent Sector,⁶ the work of UI student and employee volunteers is equivalent to \$6.3 million in earnings. In terms of actual impact to the Iowa economy, UI student and employee volunteers generated an impact of \$12.2 million in added income for the state in FY 2021-22, equivalent to supporting 495 jobs.⁷

⁵ To maintain an acceptable level of data reliability, this impact is limited to those companies that were created or supported by the UI after FY 2011-12 and were still active in Iowa in FY 2021-22.

⁶ By state value per volunteer hour was provided by Independent Sector (see https://independentsector.org/resource/vovt_details/).

⁷ The impact of volunteerism is grossly undercounted because the number of volunteer hours was self-reported to the UI and only includes a small sample of UI student and employee volunteers.



The UI is the top trainer of Iowa professionals:

- #35 Best Public Universities (USNWR)
- Top 200 Best Global Universities (USNWR)
- #1 Public University for “Writing in Disciplines”
- 66 UI colleges and programs were recognized among the best in their field in 2022 (USNWR).

Alumni impact



The education and training the UI provides for state residents has the greatest impact. Since its establishment, students have studied at the UI and entered the state workforce with greater knowledge and new skills. Today, thousands of former UI students are employed in Iowa. For example, 77% of Iowa’s dentists are UI alumni, 48% of Iowa’s physicians and pharmacists were trained at the UI, and UI educated K-12 teachers are found in 93 Iowa counties. As a result of their education from the UI, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2021-22, UI alumni generated \$3.5 billion in added income for the state economy, which is equivalent to supporting 48,113 jobs.

Total impact

The UI added \$8 billion in income to the Iowa economy during FY 2021-22, equal to the sum of the operations, construction, UI Hospitals & Clinics, and research spending impacts; the economic development impact; the visitor and student spending impacts; the volunteerism impact; and the alumni impact. This \$8 billion impact does not include the value that UI’s outreach activities are adding to the state and local communities. For context, the \$8 billion impact was equal to approximately 3.8% of the total gross state product (GSP) of Iowa. This contribution that the university provided on its own is larger than the entire Transportation & Warehousing industry in the state.

The UI’s total impact can also be expressed in terms of jobs supported. The \$8 billion impact supported 109,694 state jobs, using the jobs-to-sales ratios specific to each industry in the state. This means that one out of every 19 jobs in Iowa is supported by the activities of the UI and its students. In addition, the \$8 billion, or 109,694 supported jobs, stemmed from different industry sectors. Among non-education industry sectors, the UI’s activities and alumni in the Health Care & Social Assistance industry sector supported 19,678 jobs in FY 2021-22. If the university did not exist, these impacts would not have been generated in Iowa.

The UI impacts by industry (jobs supported)



One out of every 19 jobs in Iowa is supported by the activities of the UI and its students.



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 the UI as an investment from the perspectives of students, taxpayers, and society in Iowa.

Student perspective



In Fall 2021, the UI served 31,206 students. Expanding to the entire FY 2021-22, the UI served more than 32,000 students. In order to attend the university, 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 UI's students in FY 2021-22 amounted to a present value of \$732.5 million, equal to \$454.2 million in out-of-pocket expenses (including future principal and interest on student loans) and \$278.3 million in forgone time and money.

In return for their investment, the UI's students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average UI bachelor's degree graduate from FY 2021-22 will see annual earnings that are \$22,800 higher than 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 \$980.4 thousand in higher earnings per graduate. The present value of the cumulative higher future earnings that the UI's FY 2021-22 students will receive over their working careers is \$3.9 billion.

The students' benefit-cost ratio is 5.4. In other words, for every dollar students invest in the UI in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$5.40 in higher future earnings. Annually, the students' investment in the UI has an average annual internal rate of return of 15.6%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.5%.

Students see a high rate of return for their investment in the UI



Average annual return for UI students
15.6%



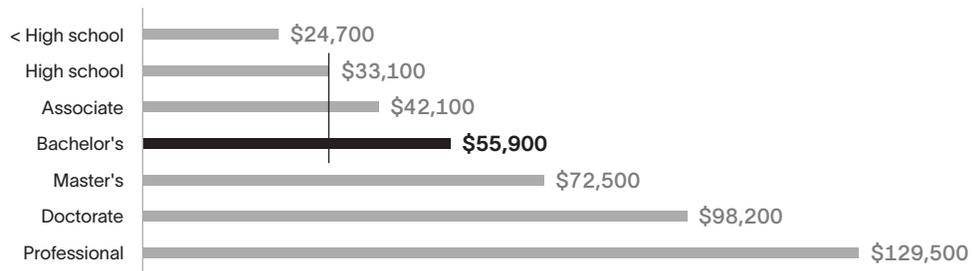
Stock market 30-year average annual return
10.5%



Interest earned on savings account (National Rate Cap)
0.8%

Source: Forbes' S&P 500, 1992-2021. FDIC.gov, 2-2022.

The average bachelor's degree graduate from the UI will see an increase in earnings of **\$22,800** each year compared to a person with a high school diploma or equivalent working in Iowa.



Source: Lightcast employment data.

Taxpayer perspective⁸



The UI generates more in tax revenue than it receives. These benefits to taxpayers consist primarily of taxes that the state and local government will collect from the added revenue created in the state. As UI 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 2021-22 students' working lives, the state and local government will have collected a present value of \$799.1 million in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of UI students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. The education that UI students receive will generate savings in three main categories: 1) healthcare, 2) justice system, and 3) income assistance. Improved health will lower students' demand for national health care services. In addition, costs related to the justice system will decrease. UI 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 university for a copy of the main report. Altogether, the present value of the benefits associated with an education from the UI will generate \$122.5 million in savings to state and local taxpayers.

Total taxpayer benefits amount to \$921.6 million, the present value sum of the added taxes and public sector savings. Taxpayer costs are \$261.2 million, equal to the amount of state government funding the UI received in FY 2021-22. These benefits and costs yield a benefit-cost ratio of 3.5. This means that for every dollar of public money invested in the UI in FY 2021-22, taxpayers will receive a cumulative present value of \$3.50 over the course of the students' working lives. The average annual internal rate of return for taxpayers is 11.4%, which compares favorably to other long-term investments in the public and private sectors.

For every dollar of public money invested in the UI, taxpayers will receive a cumulative value of **\$3.50** over the course of the students' working lives.

Social perspective



Society as a whole in Iowa benefits from the presence of the UI in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to the added income from students' increased lifetime earnings (added student income), added income from the university's activities, and increased business output (added business income), which raise economic prosperity in Iowa.

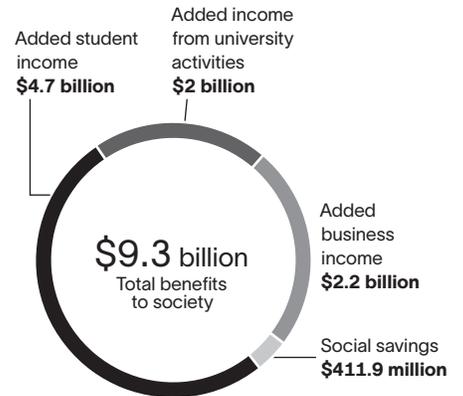
⁸ The modeling approach used for the taxpayer and social investment analyses centers on the benefits and costs arising from the UI's core mission—educating students. As such, it does not consider the taxpayer or social benefits arising from the UI Hospitals & Clinics' provision of healthcare to Iowans and the study removes the operational costs and benefits of the UI Hospitals & Clinics from its analysis.

Benefits to society also consist of the savings generated by the improved lifestyles of UI 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. Justice system savings include avoided costs to the government and society due to less judicial activity. Income assistance savings include reduced welfare and unemployment claims. For a list of study references, contact the university for a copy of the main report.

Altogether, the social benefits of the UI equal a present value of \$9.3 billion. These benefits include \$4.7 billion in added student income, \$2.2 billion in added business income, \$2.0 billion in added income from university activities, as well as \$411.9 million in social savings related to health, crime, and income assistance in Iowa. People in Iowa invested a present value total of \$2.3 billion in the UI in FY 2021-22. The cost includes all the university and student costs.

The benefit-cost ratio for society is 4.1, equal to the \$9.3 billion in benefits divided by the \$2.3 billion in costs. In other words, for every dollar invested in the UI, people in Iowa will receive a cumulative value of \$4.10 in benefits. The benefits of this investment will occur for as long as the UI's FY 2021-22 students remain employed in the state workforce.

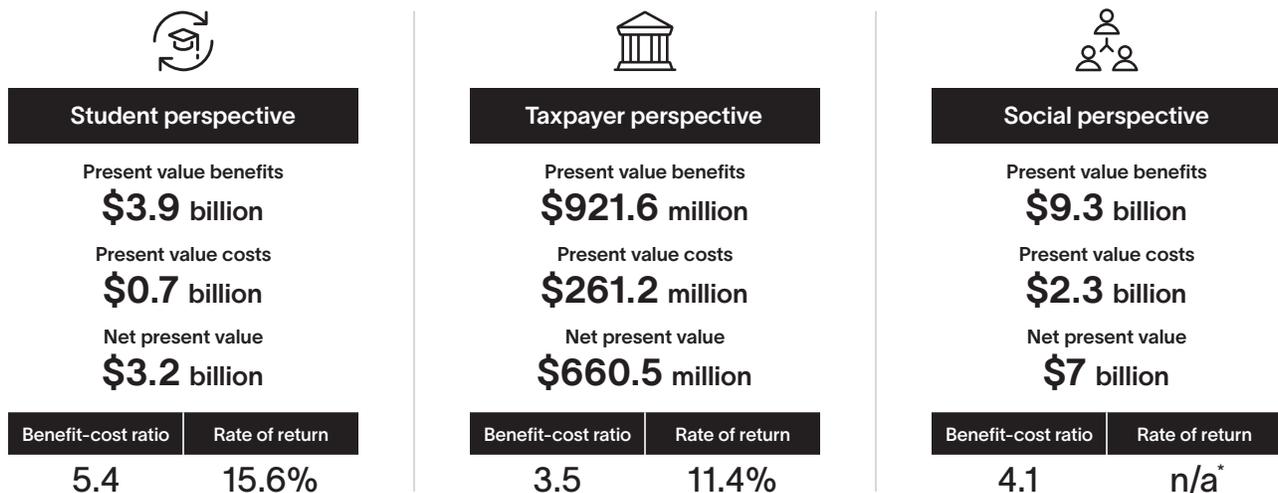
Social benefits in Iowa from the UI



Source: Lightcast impact model.

Summary of investment analysis results

The results of the analysis demonstrate that the UI is 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 from the UI. At the same time, taxpayers' investment in the UI returns more to government budgets than it costs and creates a wide range of social benefits throughout Iowa.



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

Conclusion

The results of this study demonstrate that the UI creates value from multiple perspectives. The university benefits state businesses by increasing consumer spending in the state and supplying a steady flow of qualified, trained workers to the workforce. The UI enriches the lives of students by raising their lifetime earnings and helping them achieve their individual potential. The university benefits state and local taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, the UI benefits 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 2021-22 academic and financial reports from the UI, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Lightcast'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 university for a copy of the main report.

The results of this study demonstrate that the UI creates value from **multiple perspectives.**



Lightcast provides colleges and universities with labor market data that help create better outcomes for students, businesses, and communities. Our data, which cover more than 99% of the U.S. workforce, are compiled from a wide variety of government sources, job postings, and online profiles and résumés. Hundreds of institutions use Lightcast to align programs with regional needs, drive enrollment, connect students with in-demand careers, track their alumni's employment outcomes, and demonstrate their institution's economic impact on their region. Visit lightcast.io/solutions/education to learn more or connect with us.