



The 2020 Economic Impact Report

**NEW YORK INSTITUTE
OF TECHNOLOGY**

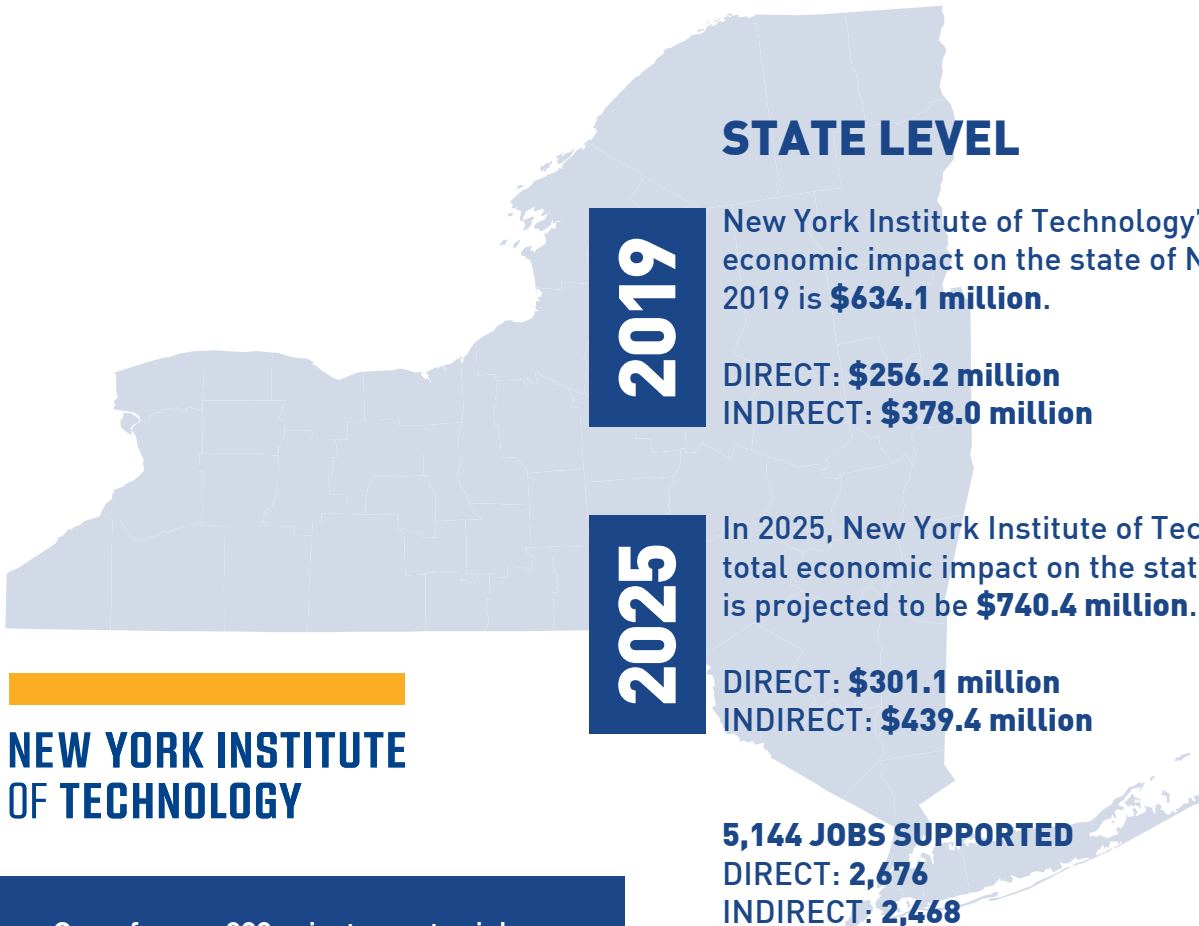
March 2020

The 2020 Economic Impact Report



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NEW YORK INSTITUTE OF TECHNOLOGY

One of every 200 private-sector jobs in the county is supported directly or indirectly by New York Institute of Technology.

In 2019, New York Institute of Technology employees and students generated **\$16.1 million** in charitable donations and volunteer services throughout the county.

In 2025, New York Institute of Technology employees and students will generate more than **\$17.4 million** in charitable donations and volunteer services throughout the county.

The current living alumni, over the course of their working lifetime, will generate an economic impact on New York state of **\$24.4 billion**.

STATE LEVEL

2019

New York Institute of Technology's total economic impact on the state of New York in 2019 is **\$634.1 million**.

DIRECT: **\$256.2 million**
INDIRECT: **\$378.0 million**

2025

In 2025, New York Institute of Technology's total economic impact on the state of New York is projected to be **\$740.4 million**.

DIRECT: **\$301.1 million**
INDIRECT: **\$439.4 million**

5,144 JOBS SUPPORTED

DIRECT: **2,676**
INDIRECT: **2,468**

\$46.0 million generated in state and local tax revenue

COUNTY LEVEL

New York Institute of Technology's total economic impact in Nassau County is **\$363.0 million**.

DIRECT: **\$115.0 million**
INDIRECT: **\$248.0 million**

3,108 JOBS SUPPORTED

DIRECT: **1,204**
INDIRECT: **1,904**

GOVERNMENT REVENUE IMPACT

In 2019, New York Institute of Technology generated in state tax revenue **\$46.0 M**; projecting to **\$53.1 M** in state tax revenue in 2025.

Introduction

New York Institute of Technology (New York Tech) is a private, not-for-profit institution that was founded in 1955. The university has campuses in New York City (Manhattan) and Long Island (Old Westbury), New York; Jonesboro, Arkansas; and Vancouver, British Columbia, as well as programs around the world.

The university comprises three schools and three colleges, all with an emphasis on technology and applied scientific research: School of Architecture and Design, School of Health Professions, School of Management, College of Engineering and Computing Sciences, College of Arts and Sciences, and College of Osteopathic Medicine.

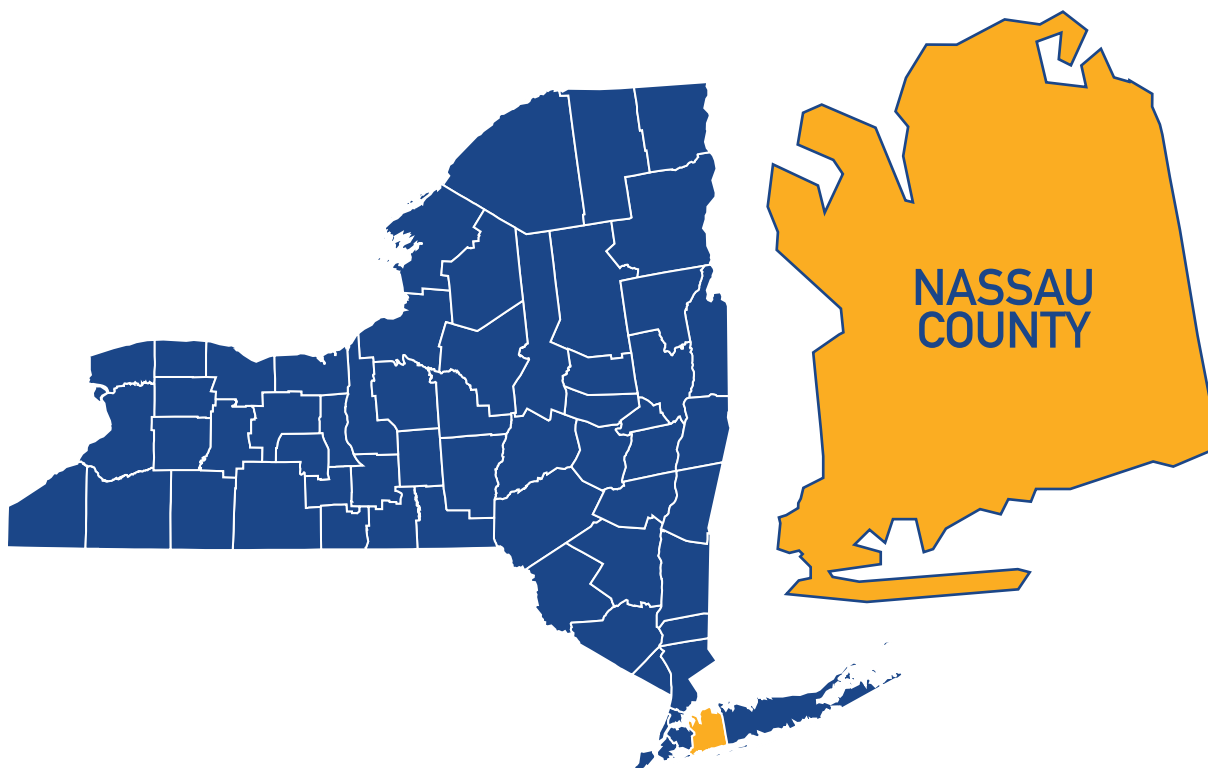
New York Institute of Technology offers more than 100-degree programs, including undergraduate, graduate, and professional programs, in more than 50 fields of study. A non-profit, independent, private, and nonsectarian institution of higher education, New York Tech has more than 9,000 students worldwide. Since 1955, the university has pursued its mission to:

- Provide career-oriented professional education;
- Give all qualified students access to opportunity; and
- Support research and scholarship that benefit the larger world.

In March 2014, New York Institute of Technology announced plans to open an osteopathic medical school site on the campus of Arkansas State University-Jonesboro. In 2016, New York Institute of Technology College of Osteopathic Medicine opened a site at this location.

New York Institute of Technology is No. 42 on U.S. News & World Report's 2020 Best Regional Universities-North rankings. New York Tech offers a full range of undergraduate majors, plus master's and doctoral programs. The university's doctoral degrees include D.O., D.P.T., and two Ph.D. programs (computer science and medical & biological sciences) with additional doctoral program expansion planned in the near future. The university's history as an innovation hub includes the CGL (computer graphics lab) that gave birth to 3-D computer graphic animation and integration of the first computers into classroom learning.

To quantify New York Tech's economic, societal, and community impacts within the state and county, the university retained the nationally recognized consulting firm Tripp Umbach in October 2019 to complete an economic and community impact study for Fiscal Year 2019. The economic impact study quantifies such impact and produces a comprehensive report that can be shared with a variety of internal and external stakeholders, including university administration, board members, and various community partners.





Project Overview

Tripp Umbach conducted an economic impact study to quantify the economic impact of the operations of the university, the economic impact of alumni, and the social impact that the university has on Nassau County and the state. This report measures the direct and indirect/induced economic impact stemming from New York Institute of Technology's operations.

The report is positioned to quantify the following:

- The economic impact of New York Institute of Technology's related expenditures;
- State and local government revenues allocable to the presence and operations of New York Institute of Technology;
- Direct and indirect/induced employment allocable to New York Institute of Technology.

NEW YORK INSTITUTE OF TECHNOLOGY

STUDY PROFILE

Methodology:	IMPLAN
Fiscal Year:	2019 and 2025
Study Geography:	New York State and Nassau County
This Study Includes:	New York Institute of Technology faculty, staff, and students

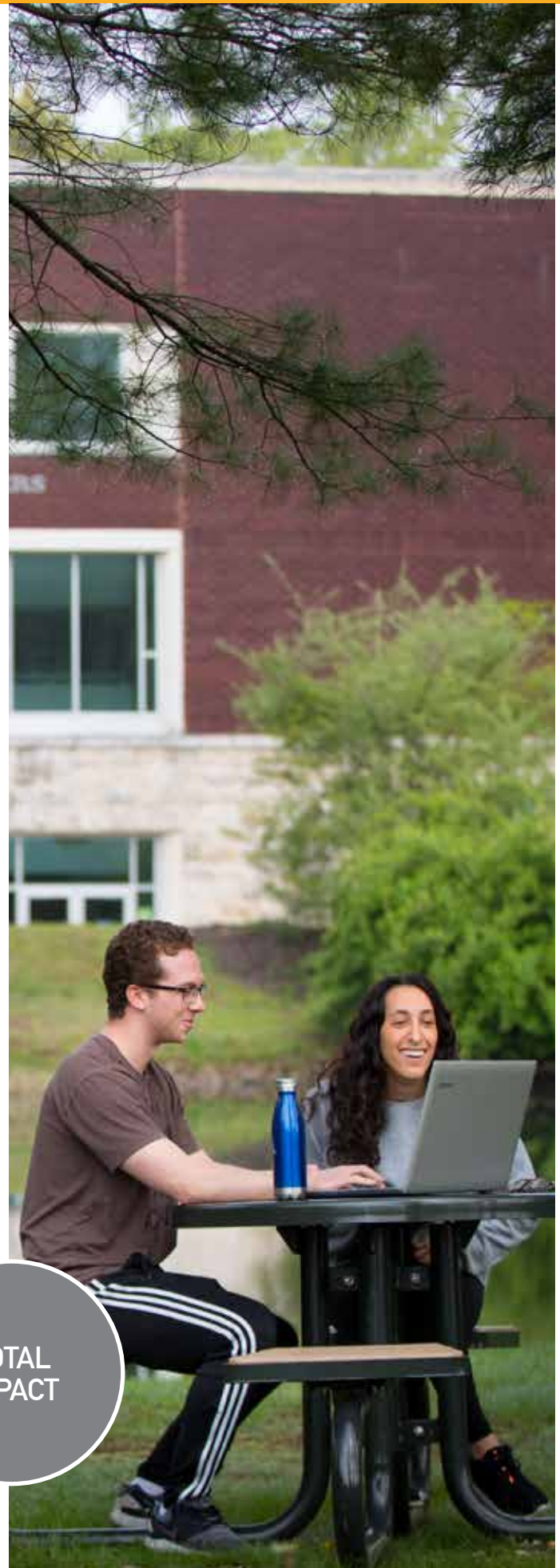
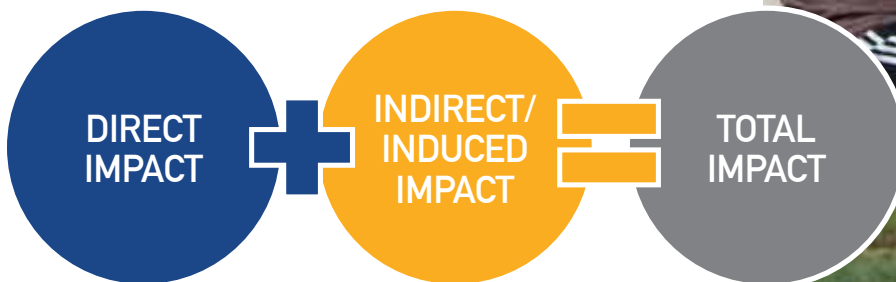
Economic Impact of New York Institute of Technology

New York Institute of Technology was founded in New York City in 1955. In 1965, it opened the 1,050-acre Long Island campus along the wooded hillsides of Old Westbury, New York. New York Tech College of Osteopathic Medicine opened on the Long Island campus in 1977 and is the only osteopathic medical school on Long Island. From 2009 to 2016, the Old Westbury campus experienced a number of significant improvements, including the renovation of the Student Activities Center, creation of a Life Sciences biomedical research laboratory, renovation of Engineering Materials lab, Clean Rooms, development of a Nursing Simulation lab, and construction of an Entrepreneurship and Technology Innovation Center (ETIC). In 2015, New York Tech received from New York State a grant for a portion of the costs required to renovate a 5,300-square-foot facility to house three new laboratories on its Old Westbury campus.

The New York City campus, located in four buildings near Columbus Circle between 60th and 62nd streets on Broadway, offers a full range of classes in four of the university's six schools. Its central location is accessible via subway and bus routes and is close to concert halls, theaters, museums, and libraries. In 2014, New York Tech opened a simulated trading floor, equipped with the latest technologies, including hardware, software, databases, and data feeds. Recruiters from major companies such as Google visit the Manhattan campus regularly for luncheons with students and information sessions.

Economic Impact

Economic impact studies measure the direct economic impact of a company's/organization's spending, plus additional indirect spending in the economy that is generated by or results from direct spending. Additional information on economic impact and the multiplier effect can be found in Appendix B and C.

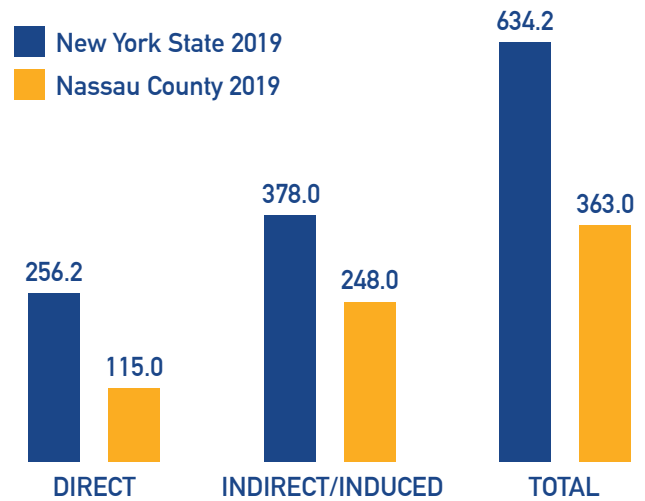


New York Institute of Technology's Overall Contributions 2019

In fiscal year 2019, New York Institute of Technology's operations had a direct impact in New York state of \$256.2 million and an indirect/induced impact of \$378.0 million, making the total annual economic impact of New York Tech's operations to the state \$634.2 million (See Figure 2).

The total overall economic impact of New York Tech in Nassau County accounts for \$363.0 million, as \$115.0 million was seen from direct impacts and \$248.0 million in indirect/induced impacts.

FIGURE 2: NEW YORK INSTITUTE OF TECHNOLOGY'S OVERALL ECONOMIC IMPACT 2019

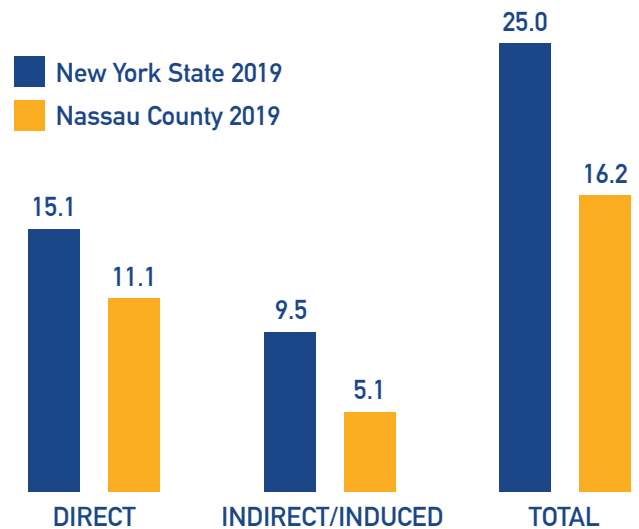


New York Institute of Technology's Construction Contributions 2019

In fiscal year 2019, New York Institute of Technology's construction contributions had a direct annual impact in New York state of \$15.1 million and an indirect/induced impact of \$9.5 million, making the total annual economic impact of New York Tech's operations to the state \$25.0 million (See Figure 3).

The total overall construction impact of New York Institute of Technology in Nassau County accounts for \$16.2 million, as \$11.1 million was seen from direct impacts and \$5.1 million in indirect/induced impacts.

FIGURE 3: NEW YORK INSTITUTE OF TECHNOLOGY'S CONSTRUCTION IMPACT 2019

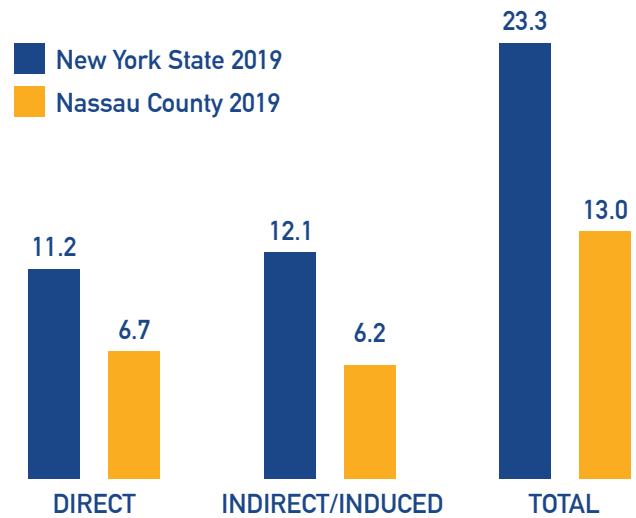


New York Institute of Technology's Research Contributions 2019

In fiscal year 2019, New York Institute of Technology's research contributions had a direct annual impact in New York state of \$11.2 million and an indirect/induced impact of \$12.1 million, making the total annual economic impact of New York Tech's operations to the state \$23.3 million (See Figure 4).

The total overall research impact of New York Institute of Technology in Nassau County accounts for \$13.0 million, as \$6.7 million was seen from direct impacts and \$6.2 million in indirect/induced impacts.

FIGURE 4: NEW YORK INSTITUTE OF TECHNOLOGY'S RESEARCH IMPACT 2019

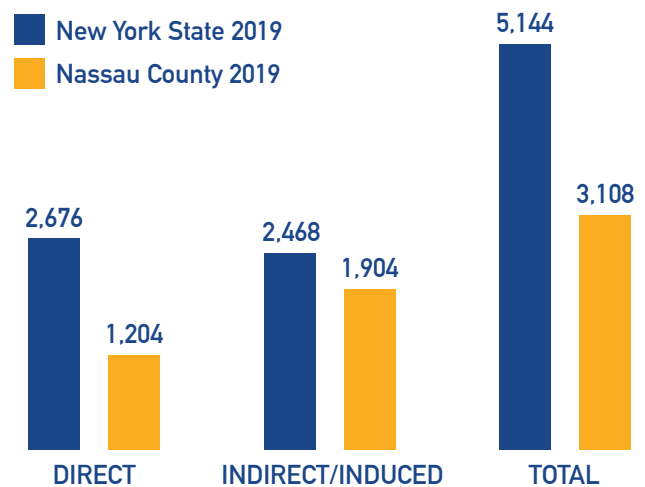


State and County Employment Impact 2019

In 2019, New York Institute of Technology's operations directly support 5,144 jobs throughout New York state. This includes 2,676 direct employees and an additional 2,468 indirect/induced employees who are all employed due to the operations New York Institute of Technology has throughout the state (See Figure 5).

New York Institute of Technology in Nassau County employs in total 3,108 employees: 1,204 directly and 1,904 indirectly/induced. Approximately one of every 200 private-sector jobs in the county is supported directly or indirectly by New York Tech.

FIGURE 5: EMPLOYMENT IMPACT IN NEW YORK STATE AND NASSAU COUNTY 2019

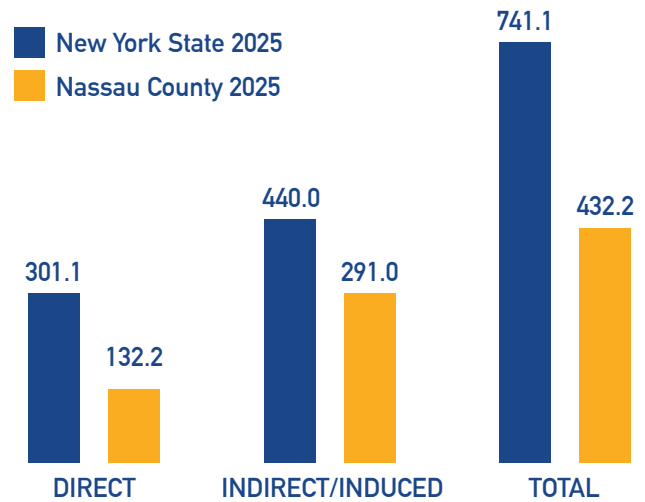


New York Institute of Technology's Overall Economic Impact 2025

In fiscal year 2025, it is estimated that New York Institute of Technology's overall economic contributions will have a direct annual impact in New York state of \$301.1 million and an indirect/induced impact of \$440.0 million, making the total annual economic impact of New York Tech's operations to the state \$741.1 million (See Figure 6).

The total overall economic impact of New York Institute of Technology in Nassau County by 2025 is estimated to account for \$423.2 million, as \$132.2 million is seen from direct impacts and \$291.0 million in indirect/induced impacts.

FIGURE 6: NEW YORK INSTITUTE OF TECHNOLOGY'S OVERALL ECONOMIC IMPACT 2025

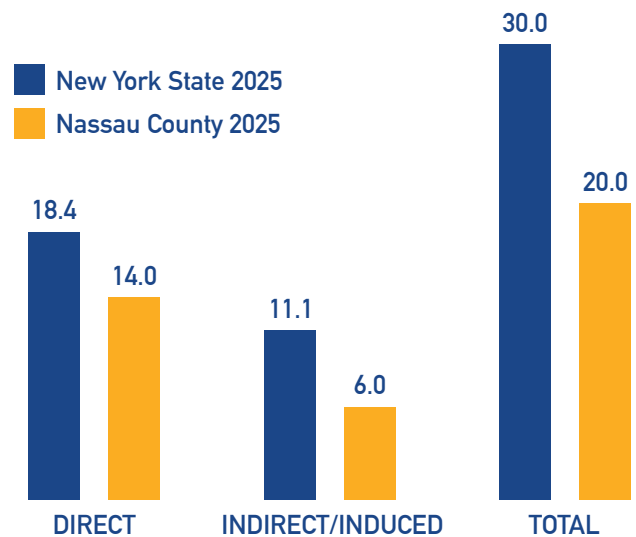


New York Institute of Technology's Construction Contributions 2025

In fiscal year 2025, New York Institute of Technology's construction contributions are estimated to have a direct annual impact in New York state of \$18.4 million and an indirect/induced impact of \$11.1 million, making the total annual economic impact of New York Institute of Technology's operations to the state \$30.0 million (See Figure 7).

The total overall construction impact of New York Tech in Nassau County accounts for \$20.0 million, as \$14.0 million was seen from direct impacts and \$6.0 million in indirect/induced impacts.

FIGURE 7: NEW YORK INSTITUTE OF TECHNOLOGY'S CONSTRUCTION IMPACT 2025

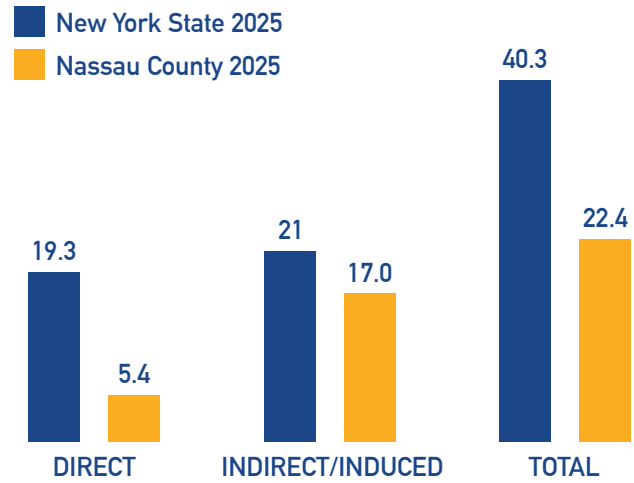


New York Institute of Technology's Research Contributions 2025

In fiscal year 2025, New York Institute of Technology's research contributions have been estimated to have a direct annual impact in New York state of \$19.3 million and an indirect/induced impact of \$21.0 million, making the total annual economic impact of New York Tech's operations to the state \$40.3 million (See Figure 8).

The total overall research impact of New York Institute of Technology in Nassau County accounts for \$22.4 million, as \$5.4 million was seen from direct impacts and \$17.0 million in indirect/induced impacts.

FIGURE 8: NEW YORK INSTITUTE OF TECHNOLOGY'S RESEARCH IMPACT 2025

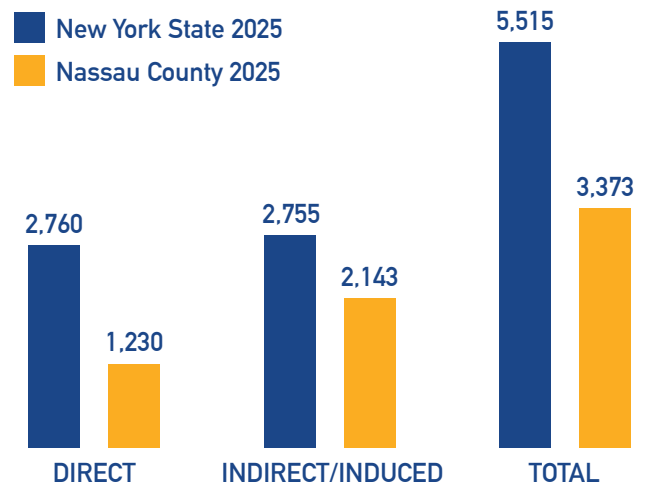


State and County Employment Impact 2025

In 2025, New York Institute of Technology's operations are estimated to support 5,515 jobs directly throughout New York state. This includes 2,760 direct employees and an additional 2,755 indirect/induced employees who are all employed due to New York Tech's operational impact throughout the state (See Figure 9).

New York Institute of Technology in Nassau County is estimated to employ 3,373 employees in total: 1,230 directly and 2,143 indirectly/induced.

FIGURE 9: EMPLOYMENT IMPACT IN NEW YORK STATE AND NASSAU COUNTY 2025

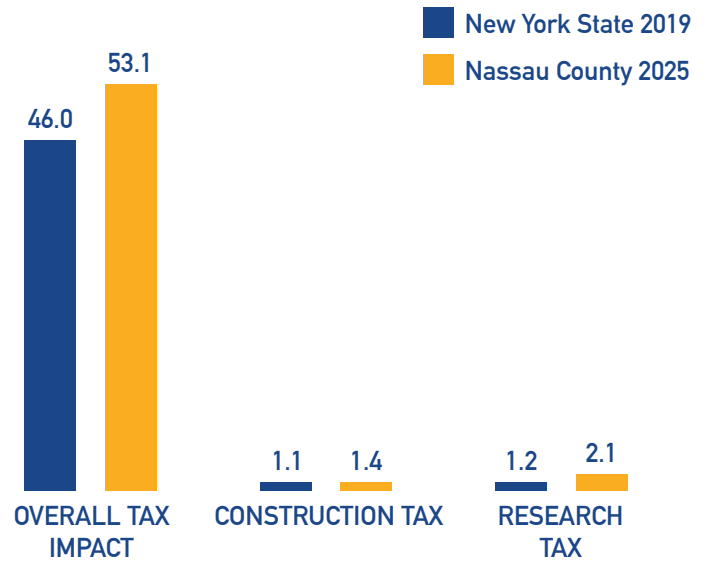


Government Revenue Impact (State and Local Taxes)

New York Institute of Technology contributes significantly to the state and local tax base. Due to the university's spending with state and local organizations, support of jobs for university employees living in New York, and visitor spending, these offices contribute to state and local tax revenues. In FY19, NYIT generated \$46.0 million in direct and indirect/induced tax payments for state and local governments (See Figure 10).

Projecting into 2025, New York Institute of Technology's tax impact for the state is slotted to generate \$53.1 million in direct and indirect/induced tax payments.

FIGURE 10: TAX IMPACT IN NEW YORK STATE
2019 AND 2025



New York Institute of Technology's Community Impact

New York Tech's promise to inspire critically creative thinking in professional programs infused with technology, empowering its graduates to change the world, to solve 21st-century challenges, and to reinvent the future, is true and steadfast. The university through its faculty, staff, and students is committed to the needs of its community by providing service to those in their society served through its mission and vision. Since 1955, New York Institute of Technology has pursued its mission to:

- Provide career-oriented professional education.
- Give all qualified students access to opportunity.
- Support research and scholarship that benefit the larger world.

By 2028, New York Institute of Technology will become one of the most significant academic, scientific, and economic higher education assets to New York City, the region, and the state by providing a premier experience for its students. New York Tech is committed to its institutional values. By the time of graduation, students will be able to:

- Gain a coherent understanding of the knowledge, skills, and values of their discipline;
- Achieve proficiency in oral and written communication, scientific and quantitative reasoning, critical analysis, technological competency, and information literacy;
- Integrate academic and co-curricular learning to explore concepts and questions that bridge disciplines, professions, and cultures;
- Formulate evidence-based and ethical courses of action or conclusions to address challenges and problems;
- Engage with, respond to, and reflect on political, social, environmental, and economic challenges at local, national, and global levels; and
- Develop self-efficacy, professionalism, creativity, and an innovative spirit.

Committed to the region in which New York Institute of Technology's Old Westbury campus is located, the university sees ample opportunities to provide services to its community and its residents. Impacting the Nassau community and surrounding counties, New York Institute of Technology provides endless opportunities for faculty, staff, and students to serve their community through institutional collaboration, partnership opportunities, and service-learning projects while offering a strong educational infrastructure.

The volunteerism and dedication of New York Tech's faculty, staff, and students align with the university's mission statement of providing services to those in their region.

Through the university's collective efforts, New York Tech's community as a whole generated approximately **\$16.1 million** in charitable donations and volunteer services throughout the area in 2019. The total impact that New York Institute of Technology has created goes beyond what has been presented in the report. Tripp Umbach estimates the benefits included the following:

- New York Institute of Technology faculty, staff, and students provide thousands of hours of volunteer services. The economic value of such services is estimated at more than **\$13.2 million**.
- New York Institute of Technology faculty, staff, and students also provided benefits in the form of contributions/donations to local charities. The New York Tech community is estimated to have donated more than **\$2.9 million** to local charities.

In 2025, New York Institute of Technology's community is projected to generate approximately **\$18.5 million** in charitable donations and volunteer services regionally. Tripp Umbach estimates the benefits to include the following impacts in 2025:

- New York Institute of Technology faculty, staff, and students will provide thousands of hours of volunteer services. The economic value of such services is estimated at more than **\$15.2 million**.
- New York Institute of Technology faculty, staff, and students will also provide benefits in the form of contributions/donations to local charities. It is estimated that the New York Tech community will donate more than **\$3.3 million** to local charities.

Students play a major role in outreach and engagement initiatives at New York Tech. From leading community service projects to taking service-learning courses to participating in faculty-led engagement programs, students have numerous opportunities to get involved with their communities.

The university has partnered with and served many community organizations through curricular and extracurricular student involvement. A few examples of the programs that New York Institute of Technology students participate in are detailed below.



Service-Learning

Service-learning provides an avenue for students to give back to community-based organizations using their unique skills while earning course credit. By enrolling in a class that integrates service-learning opportunities, students help non-profit organizations solve real-world community problems while learning course material. This exposure provides classroom education to life and provides students with hands-on experiences for future employers and graduate schools.

Consultants for the Public Good

This engagement provides short- and long-term project opportunities for students at nonprofit organizations and government agencies, where they can apply class-learned skills and expertise to solve real-world public problems.

Center for Global Health

The Center for Global Health (CGH) provides medical training for students to tackle and wrestle with global diseases and health disparities at home and abroad. Through an innovative educational curriculum, independent research projects, and field-based service-learning initiatives, CGH provides opportunities for students and faculty members to engage in global health research, policy, and practice.

Building Resilient Communities

Faculty, staff, administrators, and students from multiple schools and departments are engaged through service-learning opportunities to provide work experience with professionals in their concentrations. Research and skills developed as part of this initiative will be used to advance innovation and advocacy for global communities through future interdisciplinary endeavors. The program is composed of three primary initiatives with a main component also focusing on affordable housing initiatives for residents, economic development, and adult workforce development.

Harlem Partnerships

A partnership between New York Tech and Harlem Congregations for Community Improvement Inc. (HCCI) aims to help Harlem's Bradhurst neighborhood become a more resilient community. The partnership focuses on four key initiatives: after-school programs highlighting STEM-based learning, a community-led Neighborhood Design Center focused on urban housing, a Parent University English language program to help families with the college enrollment process, and a community health care program.

R-Cubed: Relief X Construction Resiliency

The R-Cubed project is a disaster relief hub in New York City that brings together experts from across the University to provide short- and long-term plans that respond to disasters. Utilizing research and case studies, as well as expertise in areas like disaster relief, sustainable architecture, urban planning, service learning, and resiliency, the interdisciplinary team can collaborate with organizations in the U.S. and abroad who are seeking ways to understand, anticipate, prevent, and respond to crises and social challenges.



Graduates who Remain in New York and Continue to Make an Impact

Worldwide New York Institute of Technology has more than 100,000 alumni with 57,994 living in New York state, 15,546 in Nassau County, 12,910 in Suffolk County, and 11,316 in Queens County. There are currently 1,507 graduates who are osteopathic physicians living in Nassau and Suffolk counties with 5,375 NYIT COM alumni living within the tristate area.

By educating students, New York Tech contributes to the talent pool of human capital throughout the state, nationally, and internationally. A degree from New York Institute of Technology increases a graduate's value, productivity, and earning potential in the job market.

Based on data for median annual earnings in the United States, a bachelor's degree increases a graduate's salary (compared with an individual with only a high school diploma) by an average of \$21,100 a year (from \$35,400 to \$56,500). A master's degree earned at a university increases a graduate's salary (compared with a graduate with only a bachelor's degree) by an average of \$13,500 a year (from \$56,500 to \$70,000 for a master's degree). A doctorate degree earned at a university increases a graduate's salary, compared with a graduate with a master's degree, by an average of \$21,000 a year (from \$70,000 to \$91,000).

The contributions of New York Institute of Technology graduates are important to the economic vitality of the state of New York. New York Institute of Technology graduated 2,202 students in 2019. Roughly 80 percent of New York Tech graduates will stay in New York after completing their degree programs; this means that approximately 1,761 New York Institute of Technology of the current year graduates will live, work, and generate impact within the state annually.

The current living alumni, over the course of their working lifetime, will generate an economic impact on New York state of \$24.4 billion.

Projections to 2025 indicate that there will be 2,600 New York Tech graduates of New York Institute of Technology annually. If approximately 80 percent of New York Institute of Technology graduates remain in New York, roughly, 2,080 of the 2025 graduates will thereby contribute to the economy of New York state.

Looking at just the class of 2019, over a lifetime of 40 years of employment, New York Tech undergraduate degree recipients who remain in New York increased their earning potential by \$11.6 million that would otherwise have been unachieved had these students not pursued an undergraduate degree. Likewise, over a lifetime of employment, New York Tech graduate students who remain in the state increased their earning potential by more than \$18.1 million that would otherwise not have been achieved had these students not pursued a graduate degree.

Projecting to 2025, New York Institute of Technology students who received their undergraduate degree and remain in the state will have an earning potential of \$14.2 million more than they would have had with only a high school diploma. Graduate students in 2025 will have the earning potential of an additional \$20.9 million once their graduate degree is obtained.

New York Tech's alumni can be felt in virtually every corner of the state. By producing highly educated, global citizens, New York Institute of Technology continues to shape a skilled workforce that will transform and lead organizations throughout New York and the world.



Appendices

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Appendix A: Methodology

Methodology Employed in the Economic Impact Study

To fully quantify the impact of New York Institute of Technology within the various geographical areas throughout this study, it was necessary for Tripp Umbach to establish a study methodology. It was critically important that the methodology used would ensure a comprehensive, yet conservative, estimate of the operation's impact, based on information compiled using uniform and consistent techniques. In addition, Tripp Umbach sought to develop a reproducible methodology, assuring that subsequent studies could build upon the information and knowledge gained through this effort.

Tripp Umbach determined that the use of the IMPLAN Pro economic impact model software was most appropriate for this analysis. The IMPLAN econometric model operates by estimating the direct impact, indirect impacts, and induced impacts of specific economic activity. Direct economic impacts are those attributable to the initial economic activity. For example, an operation with 10 full-time employees creates 10 direct jobs. Indirect economic impacts are those economic activities undertaken by vendors and suppliers within the supply chain of the direct activity because of the initial economic activity. For example, suppliers of goods, materials, and services used in the direct activities produce indirect economic impacts. Induced economic impacts result from the spending of wages paid to employees in local industries involved in direct and indirect activities. Tripp Umbach selected the IMPLAN model due to its frequent use in economic impact in addition to its development independent of local influences.

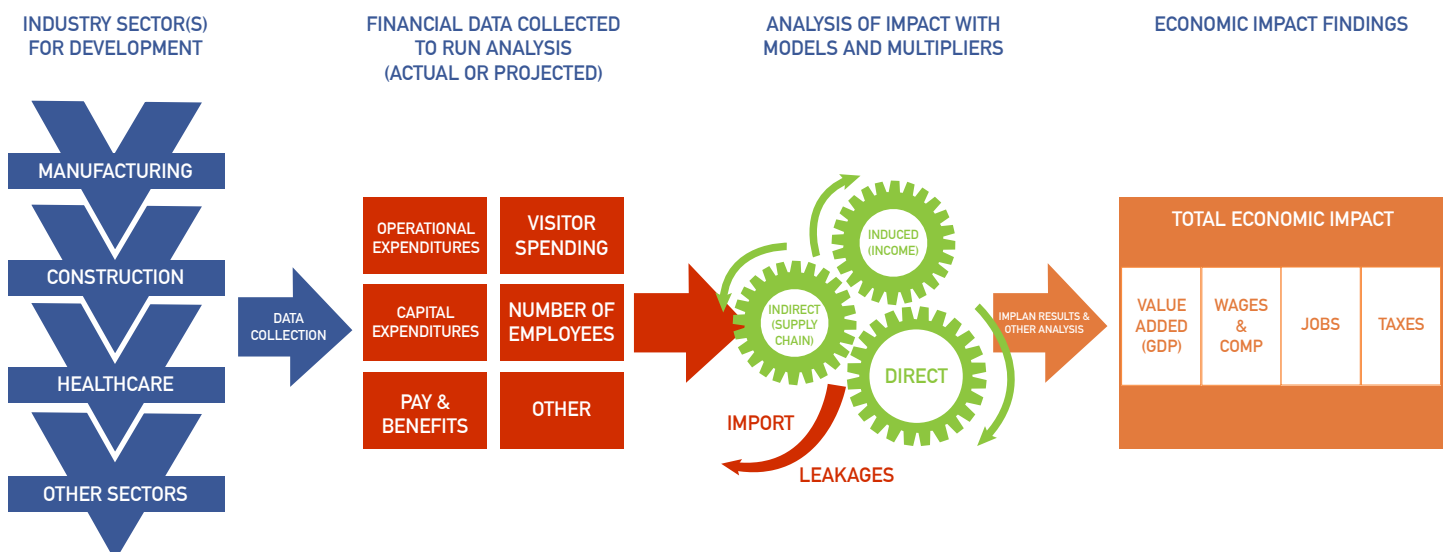
Tripp Umbach collected employment information regarding the economic activity of New York Institute of Technology operations themselves and followed up to ensure the data was the most current available.

In this report, the impact was measured using IMPLAN datasets. The IMPLAN data files include information for 528 different industries (generally three- or four-digit SIC code breakdown) and 21 different economic variables. IMPLAN sources its employment data from ES202 employment security data supplemented by county business patterns and REIS data. Employment data utilized in the analysis include full-time and part-time positions.

It should be noted that, at the time of performing the New York Institute of Technology assessment, the most recent IMPLAN data files for the county measured at the state level were for 2015-2016. While the data is not current, it is unlikely that the fundamental economic structure of the state's economic fabric has changed to an extent that would invalidate the analysis. IMPLAN data and accounts closely follow the accounting conventions used in the "Input/Output Study of the U.S. Economy" by the U.S. Bureau of Economic Analysis and the rectangular format recommended by the United Nations.

By deriving the direct and actual employment numbers from IMPLAN for each county, Tripp Umbach conducted input-output modeling to analyze the current impact of the industry in each county. Tripp Umbach supplied additional information as required to supplement the data supplied by New York Institute of Technology.

FIGURE 5: METHODOLOGY FIGURE



Appendix B: Report Terms

STUDY YEARS: Fiscal Year 2019 & Fiscal Year 2025

Multiplier Effect

The multiplier effect is the additional economic impact created as a result of the organization's direct economic impact. Local companies that provide goods and services to an organization increase their purchasing by creating a multiplier.

Direct Impact

Direct impact includes all direct effects the company has on the regional area due to the company operations. These items include direct employees, company spending, employee spending, and spending by visitors to the company.

Indirect Impact

The impact of local industries buying goods and services from other local industries. The cycle of spending works its way backward through the supply chain until all money leaks from the local economy, either through imports or by payments to value added. The impacts are calculated by applying direct effects to the Type I multipliers.

Induced Impact

The response by an economy to an initial change (direct effect) that occurs through re-spending of income received by a component of value added. IMPLAN's default multiplier recognizes that labor income (employee-compensation and proprietor-income components of value added) is not leakage to the regional economy. This money is recirculated through the household spending patterns, causing further local economic activity.

Indirect Tax Payments

Government revenue that is collected by governmental units in addition to those paid directly by an organization, including taxes paid directly by employees of the organization, visitors to the organization, and vendors who sell products to the organization.

Indirect Employment

Indirect employment is the additional jobs created, as a result of the organization's economic impact. Local companies that provide goods and services to an organization increase their number of employees as purchasing increases, thus creating an employment multiplier.

Total Economic Impact

The total economic impact of an organization includes both the direct impact and the indirect impact generated in the economy, as a result of the organization. Direct impact includes items such as organizational spending, employee spending, and spending by visitors to the organization. Indirect impact, also known as the multiplier effect, includes the re-spending of dollars within the local economy.

Appendix C: Frequently Asked Questions

What is economic impact?

This is a common analysis used by the Bureau of Economic Analysis, the Federal Reserve, state agencies, universities, and private sector firms. Economic impact begins when a company spends money. Economic impact studies measure the direct economic impact of a company's spending, plus additional indirect spending in the economy that is generated by or results from direct spending. Economic impact has nothing to do with dollars collected by companies, their profitability, or even their sustainability, since all operating organizations have a positive economic impact when they spend money and attract spending from outside sources.

Direct economic impact measures the dollars that are generated within the state area due to the presence of New York Institute of Technology. This includes not only spending on goods and services with a variety of vendors within the state and the spending of its staff and visitors, but also the business volume generated by businesses within the state that benefit from New York Tech's spending. It is important to remember that not all dollars spent by a company remain in the state. Dollars that "leak" out of the state or county in the form of purchases from vendors not located in the state are not included in the company's economic impact on the state.

The total economic impact reflects the "multiplier" of spending by employees and by companies that do business with New York Institute of Technology. Support businesses may include lodging establishments, restaurants, construction firms, vendors, temporary agencies, etc. Spending multipliers attempt to estimate the ripple effect that every dollar of direct spending generates throughout the state and county's economy.

What is the multiplier effect?

Multipliers are a numeric way of describing the secondary economic activity that results from a company's direct operations. For example, an employment multiplier of 1.8 would suggest that for every 10 employees hired in the given industry, eight additional jobs would be created in other industries, such that 18 total jobs would be added to the given economic region for every 10 direct hires. The multipliers used in this study are Type SAM (Social Accounting Matrix). Type SAM multipliers capture the direct, indirect (Type I), and induced effects of economic activity (the induced effects are based on information in the social account matrix). Theoretically, one could internalize any of the institutions (households, state and local government, federal government, capital). When one internalizes an institution, one builds into the SAM multipliers the activities of that institution. It is assumed that every dollar collected by that institution will be re-spent for that institution's operations. Any inter-institution transfers are also internalized. The multipliers used in this study are decidedly conservative and at the low end of the scale of what are typically observed in studies of this nature. In addition, the study considers only the spending that occurs within the state, and employee compensation includes only dollars available for spending; deferred compensation was not included in the analysis.

The multiplier model is derived mathematically using the input-output model and social accounting format described above. The multipliers are applied to the value of purchases for final use to calculate the total economic impact of each dollar spent. Industries that produce goods and services for consumer consumption must purchase products, raw materials, and services from other companies to create their product. These vendors must also procure goods and services. This cycle continues until all the money is leaked from the region's economy. Three types of effects are measured with a multiplier: the direct, the indirect, and the induced effects. The direct effect is the known or predicted change in the state's economy that is to be studied. The indirect effect is the business-to-business transactions required to satisfy the direct effect. Finally, the induced effect is derived from spending on goods and services by people working to satisfy the direct and indirect effects. For example, industries that produce goods and services for consumer consumption must employ people and purchase products, raw materials, and services from other companies to create their product; this is the direct economic impact. These vendors must procure goods and services; this is the indirect effect. The employees of New York Institute of Technology and the companies receiving money from the organization spend their income with retailers, restaurants, and other businesses; this is the induced economic impact.

- Direct effects take place only in the industry immediately being studied.
- Indirect effects concern inter-industry transactions. Because New York Tech is in business, it has a demand for state produced materials needed to operate.
- Induced effects measure the effects of the changes in household income. Employees of New York Institute of Technology and suppliers purchase from state retailers and restaurants.
- Total economic impacts are the total changes to the original economy as a result of New York Institute of Technology's operations (i.e., direct effects + indirect effects + induced effects = total economic impact).

What methodology was used in this study?

IMPLAN (IMPact analysis for PLANning) data and software. Using classic input-output analysis combined with regional specific social accounting matrices and multiplier models, IMPLAN provides a highly accurate and adaptable model for its users. The IMPLAN database contains county, state, ZIP code, and federal economic statistics that are specialized by region, not estimated from national averages, and can be used to measure the effect on a national, regional, or local economy of a given change or event in the economy's activity.

In this report, the impact was measured using IMPLAN datasets. The IMPLAN data files include information on the economic value of activity across 528 different industries (generally three- or four-digit SIC code breakdown) and 21 different economic variables. IMPLAN sources its employment data from ES202 employment security data supplemented by county business patterns and REIS data. Employment data utilized in the analysis includes full-time and part-time positions. IMPLAN data accounts closely follow the accounting conventions used in the "Input/Output Study of the U.S. Economy" by the U.S. Bureau of Economic Analysis and the rectangular format recommended by the United Nations.

By collecting the direct and actual employment numbers from New York Institute of Technology, Tripp Umbach conducted input-output modeling to analyze the current impact of industries throughout the state. Tripp Umbach collected employment information concerning the economic activity of New York Tech's operations to ensure the data were the most currently available.

Tripp Umbach supplied additional information as required to supplement the data supplied by New York Institute of Technology.

What is employment impact?

Employment impact measures the direct employment, plus additional employment, created in the economy as a result of the operations of New York Institute of Technology. Indirect and induced employment impact refers to other employees throughout the region who exist because of New York Tech's economic impact. In other words, jobs related to the population, such as city services (police, fire), employees at local hotels and restaurants, clerks at local retail establishments, and residents employed by vendors used by New York Institute of Technology.

Is this a one-time impact or does the impact repeat each year?

The results presented in the New York Institute of Technology economic impact study are generated on an annual basis. The economic impact in future years can either be higher or lower, based on the number of employees, capital expenditures, and operating expenditures.

What are Tripp Umbach's qualifications to perform an economic impact study?

Tripp Umbach is a leading provider of economic impact studies, consultation, and communication services for a wide variety of clients throughout the United States. Since 1990, Tripp Umbach has provided economic impact analysis services to more than 300 clients. For more information, go to www.trippumbach.com.

DIRECT vs. INDIRECT vs. INDUCED IMPACT



Appendix D: Tripp Umbach

Founded in 1990, Tripp Umbach is a nationally recognized consulting firm that provides comprehensive services ranging from research and strategic planning to economic impact analyses for medical schools, hospitals, non-profit organizations, communities, and corporations throughout the world. Tripp Umbach has completed more than 500 economic impact studies over the past 30 years for clients in North America such as The Association for American Medical Colleges (Washington, D.C, U.S.), Capital Health (Halifax, NS, Canada), Cleveland Clinic (Cleveland, OH, U.S.), GE Healthcare (Waukesha, WI, U.S.), Southlake Regional Hospital (Newmarket, ON, Canada), University of Alberta Faculty of Medicine & Dentistry (Edmonton, AB, Canada), University of Pittsburgh Medical Center (Pittsburgh, PA, U.S.), and University of Washington (Seattle, WA, U.S.). Outside of North America, Tripp Umbach has completed studies for Edith Cowan University (Perth, WA, Australia), GE Healthcare Saudi Arabia (Riyadh, Saudi Arabia), Ministry of Health Trinidad and Tobago (Port of Spain, Trinidad), and University of Adelaide (Adelaide, SA, Australia).

Tripp Umbach has completed thousands of assignments worldwide and provided the blueprint for its clients to leverage their assets and seize new opportunities.

