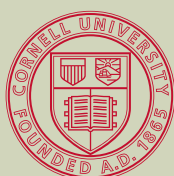


October 2014

Economic Impact on New York State

Fiscal Year 2013



Cornell University

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Executive Summary

As the land-grant university of the State of New York, Cornell University is committed to teaching, research, and public engagement that enhance the quality of life for the residents of its state. Cornell provides additional enhancement through a wide range of economic activity. The study that informs this report takes an innovative approach to assessing the university's economic impact in Tompkins County, Central New York, and New York State for fiscal year 2013. By using more realistic and refined assumptions than those in traditional models, the study's composite model and methodology address the varied economic impacts generated by a land-grant institution.

Primarily, the impacts quantified and analyzed represent five major areas of contribution to the economy: employment, purchasing, construction, students, and visitors.

The university employed 20,179 faculty and non-student staff at the Ithaca campus, Weill Cornell Medical College (WCMC), the Geneva campus, and Cornell Cooperative Extension (CCE) offices throughout New York State.

A conservative assessment of fiscal year 2013 employment, purchasing, and construction by the Ithaca and WCMC campuses accounted for an economic impact of \$3.2 billion in New York State.

In Central New York, Cornell generated \$1.6 billion related to payroll, purchasing, and construction. Of that total, \$1.2 billion was in Tompkins County.

Using the same indicators, WCMC had an impact of \$1.2 billion on the state economy, of which \$846 million was in New York City.

CCE had a total impact of \$450 million in the state.

The impacts of student and visitor spending in Tompkins County alone were assessed at \$411 million.

Additional impacts include \$10.7 million in taxes, fees, and voluntary contributions by the Ithaca campus to government and community institutions. Some of Cornell's voluntary payments in Tompkins County leveraged considerable external funds for enhancement to community infrastructure and development. WCMC accounted for \$722,000 in taxes and voluntary contributions in New York City. The impact of CCE and student, faculty, and staff volunteer activity across the state exceeded \$27 million.

Statewide, there has been an overall increase in the university's economic impact since the previous analysis in fiscal year 2009. Despite the national recession's pronounced effect on Cornell, including the broad application of tighter spending measures, the university continued its support for local governments, schools, vendors, and community institutions. In 2012, when the national unemployment average rate was 8.8 percent, the Tompkins County rate was 6 percent—one of the lowest county rates in the United States. In 2013, the Tompkins County rate dropped to 4.1 percent. These figures indicate that Cornell provides a buffer during an economic downturn. Analysis of Cornell's purchasing, construction, and payroll spending in Tompkins County shows benefit to individuals across all income levels.

In future studies, the university can use the analytical tools employed here to track the outcomes of Cornell decision-making and predict the results of various economic development scenarios at the state, regional, and local levels. The resulting insights will strengthen the university's ability to establish, shape, and grow programs of benefit to our communities.

History of Higher Education in Tompkins County

Tompkins County was created in 1817, when Cayuga Lake was part of a shipping network transporting goods between the North and South. Ithaca also had small manufacturing and retail sectors. Ezra Cornell and Andrew Dickson White were New York State senators when Abraham Lincoln signed the Morrill Land Grant Act, which provided each state with the resources to establish its own public university. Cornell and White shared an interest in educational reform, and they were largely responsible for locating New York's land-grant university in Tompkins County, on land donated by Senator Cornell.

By the end of the nineteenth century, there was also a large and growing education sector. Cornell was steadily adding new academic departments, faculty, and students. The Ithaca Conservatory of Music, later Ithaca College, was established in 1892.

As shipping routes gave way to highways and the local manufacturing sector began its slow decline, higher education became the community's predominant "business" and employer. Tompkins Cortland Community College was founded in 1968. By the late twentieth century, upstate New York State was losing population, while Tompkins County experienced modest growth.

Introduction

Consistently ranked among the leading educational institutions of the world, Cornell University differs from most of its peers in two significant ways: It is relatively new (established 1865), and it is not located in a major metropolitan area. Cornell's main campus is located in Tompkins County (2010 U.S. Census population: 101,588) in rural upstate New York. Yet Cornell has been a magnet for talented students, faculty, and staff from around the world for nearly 150 years. One of the attractions is Cornell's setting in the beautiful Finger Lakes, a region that offers a high quality of life for residents, in a community that regularly appears on "Top Ten" lists including Best College Towns.

Cornell and its vibrant home communities have grown side by side over the last 150 years, complementing each other's strengths. They share the convictions that high-quality education is a public good and that knowledge should be applied to improve quality of life for everyone. As the federal land-grant university of the State of New York, Cornell University is committed to teaching, research, and public engagement that have positive impacts on the quality of life for the residents of its state.

This report examines the impact of activities at Cornell on the local, regional, and state economies during fiscal year 2013 (FY2013), the period from July 1, 2012 to June 30, 2013. It assesses and presents the university's economic impact for the campuses in Geneva, Ithaca, and New York City for FY2013, and the university's outreach programs in calendar year 2012. It uses an approach that commonly is employed by municipal and county governments. In addition, it uses a composite model to more accurately reflect the nature of impacts generated by a land-grant institution on different sectors, and to enable planning based on more realistic assumptions. In response to major changes in the national, state, regional, and local economies since 2009 that required significant adaptations in university operations, this methodology can help Cornell proactively seek out new opportunities for economic development and innovation, and determine how the university can best support each undertaking.

This report also affords an opportunity to review relevant metrics—quantitative and qualitative—that are best suited to the university's situation, and to establish an analytical framework for strategic planning and community engagement for future development strategies.

The report is in three parts: a brief overview of the multifaceted nature of the university and context for the subsequent impact analyses and findings; the university's economic impacts, primarily in Tompkins County, and in surrounding counties and Central New York; and the university's presence and impact in New York City and on New York State as a whole. It is yet too early to quantify the impacts of the Cornell Tech campus for this study, but these will be included in subsequent studies. For details of the economic model and approach used to calculate the impacts, see Appendix: Methodology.

Section I

A Multifaceted Institution

Cornell University is first and foremost an educational institution with a trifold mission of teaching, research, and public engagement. The university has educational and research programs around the world; however, this report focuses on the university's presence in the State of New York. In FY2013, there were 14,261 undergraduates and 7,568 graduate and professional students in Cornell academic programs, for a total enrollment of 21,829 in New York State.

With one of the largest workforces in Central New York, in FY2013 the university employed 20,719 faculty and non-student staff at the Ithaca campus, the medical schools in New York City, the agricultural research campus in Geneva, New York, and through Cornell Cooperative Extension (CCE), which has a presence in every county, New York City, and Long Island. As the formal partnership between the federal, state, and county government, Cornell University, and the people of New York State, CCE is one of the principal means by which Cornell fulfills its land-grant mission. CCE translates the research conducted at Cornell into county and statewide programs and resources that benefit communities, families, individuals, farms, and other small businesses. CCE employs about 2,500 full- and part-time workers.

Cornell puts a high priority on public engagement, with outreach activities touching nearly every aspect of life. Students, faculty, and staff throughout the university share their expertise and energy with schools, businesses, government, community organizations, individuals, and families in the state. Four of the colleges at Cornell were created by an act of the New York State legislature and receive operating and construction funds from New York State. New York State benefits from the role of Cornell University's land-grant mission.

Cornell's Ithaca campus is like a small city, with more than 600 academic, research, and residential buildings. Two-thirds of the campus is open space that is used for a variety of educational purposes. The university operates round-the-clock all year to provide a safe, clean, comfortable environment for students, faculty, and staff with several self-provided services.

Cornell owns and maintains four bridges, 16 miles of streets, and 61 miles of paved sidewalks, all used by the public at large. In FY2013, the university spent \$275,000 for cleaning and minor repairs to its roads, sidewalks, and bridges. In addition, the university owns and maintains 116 acres of parking lots and some 3,800 outdoor steps. Snow removal alone from roads, sidewalks, and parking

lots cost Cornell \$507,000 in FY2013.

The university also manages natural areas and several miles of trails on campus. Cornell Plantations maintains a botanical garden and arboretum as well as several nature preserves on and off the Ithaca campus that draw local residents and visitors throughout the year.

The university owns and maintains most of its water and sewer infrastructure. The campus water system filters water from Fall Creek and delivers it to campus and adjacent neighborhoods, and serves as the back-up system for the Town of Ithaca.

The Cornell Combined Heat and Power Plant produces most of the electricity used on campus. Waste heat from the process is used to heat campus buildings.

The Lake Source Cooling facility uses frigid water from Cayuga Lake to air-condition campus buildings and Ithaca High School.

Cornell University Police is staffed with highly trained, internationally accredited, armed law-enforcement peace officers with police powers, including responding to emergency calls, conducting criminal investigations, and making arrests.

Recession and Recovery

The national recession that followed the 2008 market crash had a pronounced impact on Cornell. Students whose families were hit hard by recession suddenly needed first-time financial aid or larger grants. State support for land-grant schools and activities dropped as New York grappled with budget shortfalls. Cuts in federal funds for research, Medicare, and CCE further affected the university. The university responded through several measures, including a reduction in workforce, consolidation of many administrative processes through shared services, and streamlined information technology support services. New construction projects were put on hold.

Even with tighter spending measures, the university reaffirmed its commitment to access to education. Spending on financial aid has more than doubled since FY2008. The university also continued its support for local governments, schools, and community institutions, and retained purchasing policies that favor local vendors.

In 2012, with the national unemployment average rate at 8.8 percent, the New York State rate at 8.5 percent, and average unemployment for the six counties surrounding Tompkins at 8.4 percent, Tompkins County's unemployment rate was 6 percent—the lowest in the state and one

of the lowest county rates in the United States. In 2013, Tompkins County's average unemployment dropped to 4.1 percent—still the lowest in the state—compared to 6.6 percent statewide and 7.4 percent nationally. The long-standing, relatively low unemployment rate in Tompkins County is not entirely due to Cornell, but it is clear that the university provides a buffer in an economic downturn. When the manufacturing sector left the region in the 1970s and 1980s, unemployment did not rise as precipitously in Tompkins County as it did in other left-behind communities.

Faculty recruitment has increased, following a reduction in activity due to the recession. While many colleges and universities nationwide are filling faculty positions with part-time instructors, most of Cornell's new hires are for full-time, tenure-track positions.

Since the hold on new construction was lifted in 2010, several new facilities have been completed in Ithaca. In New York City, Weill Cornell Medical College (WCRC) recently opened a high-rise research facility, and ground was broken in 2014 for the Cornell Tech campus on Roosevelt Island.

Cornell is also working to foster economic development in the state's Southern Tier. The analytical tools used to prepare this report will enable the university to evaluate development opportunities and determine the role Cornell can play to bring about healthy, sustainable economic growth for its home communities and its state.

Table 1. Cornell University's Colleges and Schools

Undergraduate

College of Agriculture and Life Sciences*
College of Architecture, Art, and Planning
College of Arts and Sciences
College of Engineering
School of Hotel Administration
College of Human Ecology*
School of Industrial and Labor Relations*

Special Mission Faculty Units

Computing and Information Science

Graduate and Professional

Cornell Graduate School
Cornell Law School
Cornell Tech
Samuel Curtis Johnson Graduate School of Management
College of Veterinary Medicine*
Weill Cornell Medical College
Weill Cornell Medical College in Qatar
Weill Cornell Graduate School of Medical Sciences

Continuing Education

School of Continuing Education and Summer Sessions

* New York State contract college

FY2013 Revenues and Expenditures

University activities are funded through a diverse set of revenue sources. Tuition is the largest source; the next largest is patient care provided by physicians at Weill Cornell Medical College in New York City. Funding for research is the third largest source of income. Compensation and benefits are the largest expense totaling approximately 53 percent of expenditures.

Assessing Economic Impacts

Cornell's expenditures in areas such as payroll (wages and salaries, including benefits), purchasing, and construction comprise the university's direct impact on the local, regional, and state economy. Each expenditure produces multiplier effects: the indirect and induced impacts of university spending.

Indirect impact is measured by tracking spending by companies that sell goods and services to the university, looking at how they use the money they receive from Cornell to pay their own employees and to cover the cost of equipment, inventory, and other overhead. Induced impact is based on routine household spending by Cornell employees and by the employees of the university's suppliers. Housing and food are examples of routine household spending.

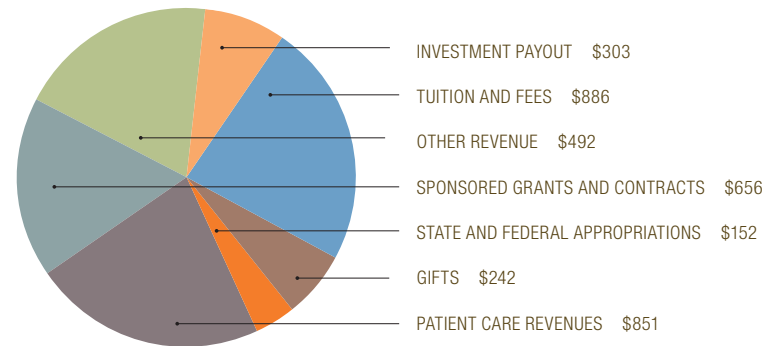
Previous economic impact analyses estimated the indirect and induced impacts using Input/Output and Social Accounting Matrix (SAM) modeling methods. For this report, a composite model adds Structural Path Analysis (SPA), which enabled the team to look more closely at how the effects of university economic activities ripple through the local economy, and a Computable General Equilibrium (CGE) model, which allows for a more realistic inclusion of the potential effects of supply shocks and supply constraints, price changes, fiscal policies, and development initiatives, in addition to the demand shocks that are traditionally considered. This approach is widely used in impact analyses by municipal governments. For a complete explanation of the mathematical processes for computing these figures, please see Appendix: Methodology.

The composite model will facilitate a regular in-house assessment of economic and community impacts using a consistent approach. The CGE model will give the university the capacity to determine the potential outcome of "what if" scenarios. This capacity, using data that are updated regularly, can be used to guide university activities related to economic development in Tompkins County, the region, and New York State.

Figure 1A. Cornell University FY2013 Operating Revenues

(in millions of dollars)

Total: \$3.6 billion

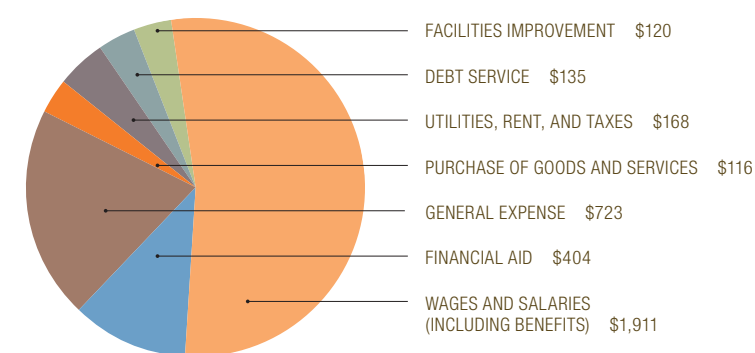


Source: Cornell University Division of Budget and Planning

Figure 1B. Cornell University FY2013 Operating Expenditures

(in millions of dollars)

Total: \$3.6 billion



Source: Cornell University Division of Budget and Planning

Section II Cornell University in Tompkins County and Central New York State

This section of the report deals with the impacts of Cornell's activity in Tompkins County and the Central New York region, primarily due to the Ithaca and Geneva campuses. The following analyses include the counties immediately adjacent to Tompkins as well as other Central New York counties where the university has a significant presence. (The impacts of Cornell Cooperative Extension are detailed under the university's statewide impact in Section III.) Direct and indirect impacts are measured in four primary sectors—employment, purchasing, construction, and student and visitor spending—along with contributions to community governments and services, the impact of volunteering, and other activities that have long-term benefits for community development.

Figure 2. Cornell-Ithaca Payroll, FY2000–2013



Note: Data are for the campuses in Ithaca and Geneva, NY only, excluding Weill Cornell Medical College in New York City and in Qatar, and Cornell Cooperative Extension.

Source: Cornell University Office of Human Resources and Safety Services

Employees and Payroll

Cornell offers competitive wages and benefits comparable to its higher-education peers, especially within Tompkins County where 60 percent of the university's jobs are located. For these and other reasons, the Chronicle of Higher Education, Working Mother magazine, AARP, and other organizations have ranked Cornell among the best employers in the country.

The impact of employee payroll is measured in induced impacts. For the Ithaca campus, these impacts are largely in Tompkins County and Central New York counties.

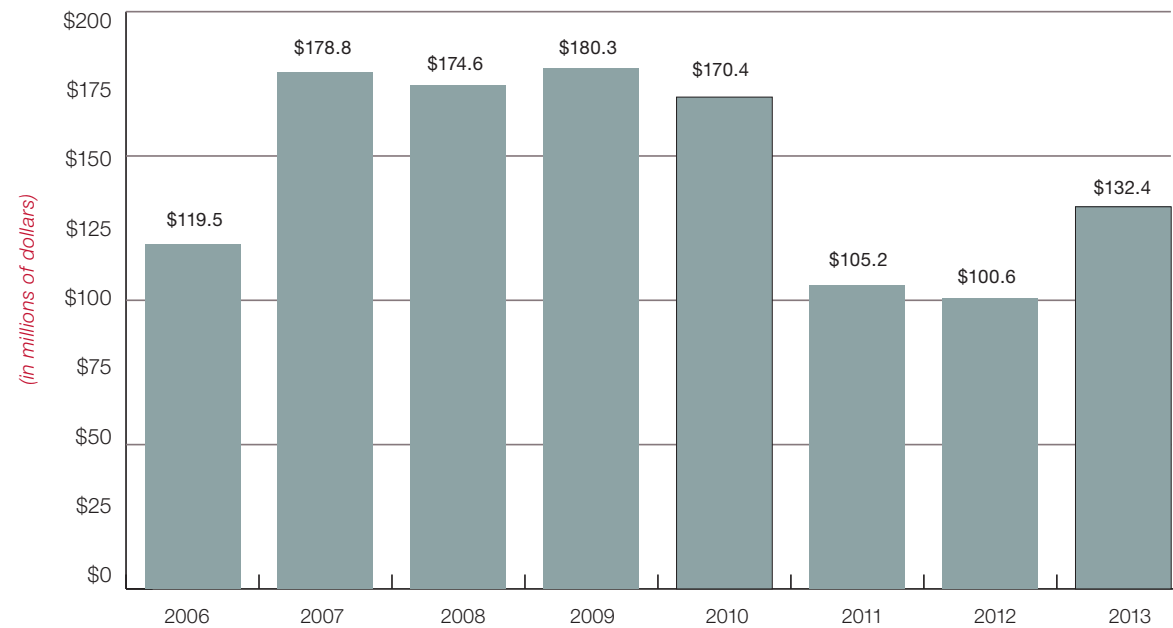
Construction

During the years after the construction hold was lifted, several new projects were started, while others that were under construction were completed. Major new projects included: the Stocking Hall expansion and renovation for the Department of Food Sciences, and the construction of Bill and Melinda Gates Hall for Computing and Information Science (CIS). The Herbert F. Johnson Museum of Art and the Law School both built below-grade expansions. Also completed during and after the hold: Milstein Hall, a transformative new facility for the design arts at Cornell connecting the disciplines in the College of Architecture, Art, and Planning; the Physical Sciences Building; the Human Ecology Building; the New York State Animal Health Diagnostic Center; and the Riley-Robb Biofuels Research Laboratory. Construction is underway on Klarman Hall, a new building for the humanities. In New York City, WCMC completed the Belfer Research Center.

Of the total \$132 million of construction spending generated by the Ithaca campus in FY2013, \$119 million was within New York State, and of that, \$95.4 million was in Central New York.

Fees from construction are a source of revenue for local municipalities. Figure 3 illustrates the expenditures for major construction activity on the Ithaca campus in the years immediately prior to and following the recession.

Figure 3. Total Cornell-Ithaca Construction Spending, FY2006–2013



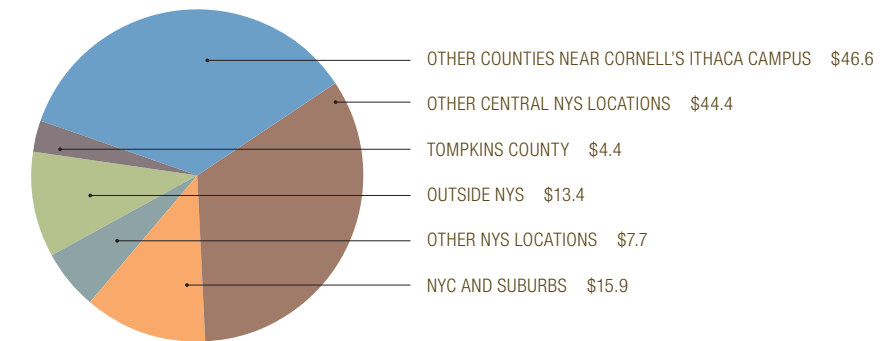
Note: Data are for the campus in Ithaca, NY only, excluding Geneva, NY; Weill Cornell Medical College in New York City; and Cornell Cooperative Extension.

Source: Cornell University Division of Facilities Services

Figure 4. Cornell-Ithaca Capital Construction Spending by Location of Prime Contractor, FY2013

(in millions of dollars)

Total: \$132 million



Source: Cornell University Division of Facilities Services

Purchasing

The Cornell policy favoring local and in-state vendors of goods and services remains unchanged. Out-of-state purchasing typically includes specialized research and academic equipment or services that are not available in New York State. There also is greater local multiplier leakage (see Appendix: Methodology) with central purchasing programs that buy quantities of goods and services from national vendors.

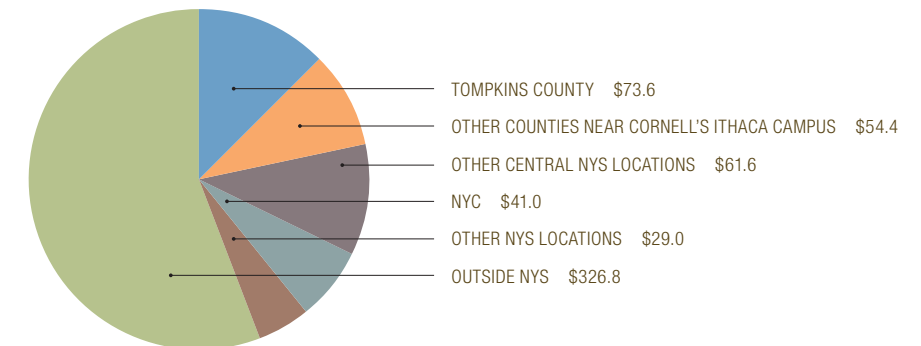
Because the university has a presence in every county in New York State, Cornell spending has an economic impact in some of the state's most remote regions, as well as in densely populated Long Island and New York City.

The following tables and figures illustrate the impacts from FY2013 purchasing by the Cornell-Ithaca campus at the local, regional, and statewide levels. (Impacts of purchasing by Cornell Cooperative Extension are dealt with in a separate section.)

Figure 5. Cornell-Ithaca FY2013 Purchasing by Location of Vendor

(in millions of dollars)

Total: \$586 million



Source: Cornell University Office of Procurement and Business Services

Table 2. Summary of Cornell-Ithaca FY2013 Economic Impact in Central New York

(in millions of dollars)

Direct University Spending		Indirect and Induced Impact* of Spending		Total Impact
Payroll	Purchasing/ construction	Employee	Vendor and contractor	
Central New York				
\$786	\$171	\$544	\$99	\$1,599
Tompkins County				
\$772	\$62	\$328	\$18	\$1,180
Tompkins and Adjacent Counties				
\$772	\$114	\$394	\$39	\$1,319

Notes:

- Indirect and induced impacts are in terms of dollar values of output.
- * Indirect and induced impact estimates based on 2012 IMPLAN data in constant 2013 dollars
- (i) Purchasing does not include UNC (unclassified) purchases
- (ii) IMPLAN's direct effects may be less than Cornell's spending b/c, according to IMPLAN, Cornell purchased from industries that in 2010 did not exist
- (iii) Central New York consists of 18 counties, including those of the Southern Tier
- (iv) Tompkins and Adjacent Counties includes Tompkins, Cayuga, Chemung, Cortland, Schuyler, Seneca, and Tioga
- (v) Payroll is by location of jobs, not residences

Source: Cornell University Department of City and Regional Planning

Table 3. Cornell University Total Purchasing by Location of Vendor, FY2013

(in millions of dollars)

Location	Cornell-Ithaca	Weill Cornell
Tompkins County	\$73.6	–
Counties adjacent to Tompkins	\$54.4	–
Other Central NYS locations	\$61.6	–
New York City (NYC)	\$41.0	\$237
Counties around NYC*		\$11
Other NYS locations	\$29.0	\$12
Outside NYS	\$326.8	\$186
Total	\$586.4	\$446

- * Includes Nassau, Suffolk, Putnam, Westchester, Rockland counties
- Source: Cornell University Office of Procurement and Business Services

Of Cornell's total payroll and purchasing expenditures in Tompkins County—including the direct, indirect, and induced effects—the categories with the greatest impact were professional, scientific, and tech services (38 percent); transit and ground transportation services (14 percent), and food services (12 percent). The purchasing data also include certain types of construction-related services.

For purchases greater than \$2 million from Tompkins County businesses, the largest share was in financial services: \$14.2 million followed by property management: \$6.4 million, food services: \$5.9 million, transit and ground passenger transportation: \$4.8 million, travel and reservation services: \$3.4 million, and hotels: \$2.1 million.

Combined FY2013 purchasing in New York State by the Ithaca and WCMC campuses totals \$520 million out of a total \$1.03 billion. (Capital construction spending for the Ithaca and WCMC campuses is listed separately.) These numbers do not include student and visitor spending.

Student Spending and Campus Visitors

About a third of the undergraduates at Cornell University in any given year are New York State residents. The remainder come to Ithaca from every state in the United

States and more than 100 countries. Just over half of Cornell's undergraduates, and 85 percent of its graduate and professional students, live off-campus, renting housing in the Ithaca market and purchasing food and other items from local restaurants and grocery stores. In 2013, students at the Ithaca campus spent nearly \$203 million on rent, food, books and supplies, health and personal care, and health insurance. Of that total expenditure, students spent \$48.3 million alone on food services, a huge boost to restaurants and grocery stores in Ithaca.

Annually, Cornell University draws several thousand visitors to the campus and to the region. According to a study prepared for the Tompkins County Strategic Tourism Planning Board, 42 percent of all travelers to the county in 2010 visited Cornell.

The economic impact of visitors travelling to Ithaca for Cornell-related activity is significant. An analysis of their daily costs shows that each visitor spends an average of \$213.55 a day on lodging, food and beverages, transportation, shopping, and entertainment. The following summary is derived from visitor counts in the listed categories, which do not include the entirety of campus visits or related expenditures.

Table 4. Summary of FY2013 Economic Impact of Cornell-Ithaca Students in Central New York

(in millions of dollars)

	Direct Student Spending	Indirect and Induced Impact*	Total Impact
	Purchasing	Spending by Vendors and Contractors	
Central New York			
	\$203	\$105	\$308
Tompkins County			
	\$203	\$72	\$275
Tompkins and Adjacent Counties			
	\$203	\$73	\$276

Notes:

- Indirect and induced impacts are in terms of dollar values of output.
 - * Indirect and induced impact estimates based on 2012 IMPLAN data in constant 2013 dollars
 - (i) Includes undergraduate, graduate, Johnson, Law School, and College of Veterinary Medicine students enrolled at the Ithaca campus
 - (ii) Central New York consists of 18 counties, including those of the Southern Tier
 - (iii) Tompkins and Adjacent Counties includes Tompkins, Cayuga, Chemung, Cortland, Schuyler, Seneca, and Tioga
- Source: Cornell University Department of City and Regional Planning

The primary reason for visiting Cornell was attendance at athletic events, including summer camps, which drew 155,006 people to campus in 2013, more than half of them from outside Tompkins County. Other attractions include campus tours for prospective students and their families (28,617), Commencement (26,954), and Alumni Reunion (6,627).

Move-In Day also brings thousands of families to town each August to help new students settle into their living quarters for the year. Most of these families use local hotels, eateries, shops, and other amenities. Cornell Plantations draws more than 15,000 visitors a year. The Statler Hotel had 58,514 guests in FY2013, many of them attending academic conferences and other events. Visitors to campus often take advantage of the opportunity to enjoy local sightseeing, wine tours, shopping, and dining.

Table 5. Summary of Economic Impact of Visitors to Cornell-Ithaca Campus, FY2013

(in millions of dollars)

Direct Visitor Spending	Indirect and Induced Impact*	Total Impact
Central New York		
\$69	\$34	\$103
Tompkins and Adjacent Counties		
\$69	\$21	\$90
Tompkins County		
\$69	\$20	\$89

Notes:
 Indirect and induced impacts are in terms of dollar values of output.
 * Indirect and induced impact estimates based on 2012 IMPLAN data in constant 2013 dollars
 (i) Central New York consists of 18 counties, including those of the Southern Tier
 (ii) Tompkins and Adjacent Counties includes Tompkins, Cayuga, Chemung, Cortland, Schuyler, Seneca, and Tioga
 Source: Cornell University Department of City and Regional Planning

Distributional Implications of Economic Activity

The distributional impacts of the university’s activities in the county are a new finding from the additional analysis carried out in the SPA model. The nation’s economy is experiencing a hollowing-out as more wage earners slip below an income that can support a middle-class lifestyle. An analysis of Cornell’s spending in Tompkins County shows that half the total impact of the university’s purchasing, construction, and payroll spending benefitted households with incomes of \$75,000 or less. Such findings suggest that institutions like Cornell can help individuals across all income levels whose fortunes rise with those of the university.

Taxes, Fees, and Voluntary Contributions

Like the vast majority of private and public universities and colleges in the United States, Cornell is a tax-exempt entity as defined by the Internal Revenue Code. However, the university owns property that is not used for academic purposes and therefore is not tax-exempt. The university’s annual property-tax bill is the third largest in Tompkins County. Cornell paid additional taxes and fees for services, permits, inspections, memberships, and other expenses. Table 7 breaks out payments by government and agency.

Cornell also supports local governments and community organizations through voluntary cash contributions and transit subsidies totaling \$5.6 million in FY2013. Table 8 lists the university’s largest contributions during the fiscal year to local agencies and non-profits.

Table 6. Cornell-Ithaca Impact on Household Income, FY2013

Tompkins County	Households: Number* (Percent)	Payroll Impact (in dollars)	Purchasing and Construction Impact (in dollars)	Total Impact (in dollars)	Percent of Initial Income
Households less than \$10k	4,105 (10.6)	\$4,620,394	\$117,893	\$4,738,287	3.0
Households \$10–15k	2,207 (5.7)	\$5,402,358	\$137,845	\$5,540,203	4.9
Households \$15–25k	3,756 (9.7)	\$26,322,282	\$671,634	\$26,993,916	10.5
Households \$25–35k	3,500 (9.1)	\$39,362,547	\$1,004,366	\$40,366,913	14.6
Households \$35–50k	5,558 (14.4)	\$79,527,471	\$2,029,205	\$81,556,676	17.4
Households \$50–75k	6,941 (18.0)	\$164,780,772	\$4,204,510	\$168,985,281	21.4
Households \$75–100k	4,058 (10.5)	\$92,995,272	\$2,372,847	\$95,368,119	20.9
Households \$100–150k	4,850 (12.6)	\$113,761,799	\$2,902,721	\$116,664,520	21.6
Households \$150k+	3,570 (9.3)	\$101,934,448	\$2,600,937	\$104,535,385	15.9

Notes:
 * 2008–2012 American Community Survey 5-Year Estimates: <http://factfinder2.census.gov>
 (i) Households less than \$10k represent those earning less than \$10,000 in 2010
 (ii) Households \$10–15k are those earning at least \$10,000 but less than \$15,000 in 2010
 (iii) Households \$150k+ represent those earning over \$150,000 in 2010
 Source: Cornell University Department of City and Regional Planning

Table 7. Taxes and Fees Paid by Cornell-Ithaca, FY2013

(in dollars)

	Property Tax	Sewer and Water	Other Taxes/ Fees	Total
City of Ithaca	\$204,830	\$1,295,314	\$93,270	\$1,593,414
Town of Ithaca	\$42,144	\$550,356	–	\$592,500
Ithaca City School District	\$830,230	–	–	\$830,230
Dryden School District	\$7,108	–	–	\$7,108
Lansing School District	\$789,424	–	–	\$789,424
Tompkins County	\$598,291	–	\$429,646	\$1,027,937
Village of Cayuga Heights	\$13,435	–	\$2,590	\$16,025
Town of Dryden	\$4,263	–	\$37,394	\$41,657
Town of Lansing	\$63,087	–	\$1,438	\$64,525
Village of Lansing	\$43,352	–	\$79,664	\$123,016
NYSDEC	–	–	\$64,695	\$64,695
Total	\$2,596,164	\$1,845,670	\$708,697	\$5,150,531

Note: Data are for the campus in Ithaca, NY only, excluding Geneva, NY, Weill Cornell Medical College in New York City, and Cornell Cooperative Extension.
Source: Office of Government and Community Relations

In summary, the direct and indirect impacts generated by payroll and purchasing alone, of the Ithaca and WCMC campuses in New York State, total \$3.2 billion (see Table 9). In addition, the inclusion of the impacts of Ithaca student and campus visitor spending add \$411 million. Additional taxes, fees, and voluntary payments contribute another \$10.7 million. The contributions to the Community Housing and Transportation Initiatives provide matches to municipal funds and have leveraged significantly more in federal, state, and private funding to enhance livability in the county.

Table 8. Cornell-Ithaca Voluntary Cash Contributions and Public Transit Subsidies, FY2013

Recipient of Contribution or Subsidy	Amount (in dollars)
Tompkins County Area Transit Partnership	\$3,465,885
City of Ithaca—fire and other services	\$1,225,789
Ithaca City School District	\$450,000
Community Housing Initiative	\$150,000
Community Transportation Initiative	\$58,243
Tompkins County Daycare Council	\$44,000
Tompkins County Area Development	\$32,750
Cancer Patient Transportation Assistance Program	\$20,790
Family and Children’s Services	\$20,000
Other	\$169,096
Total	\$5,636,553

Note: Data are for the campus in Ithaca, NY only, excluding Geneva, NY, Weill Cornell Medical College in New York City, and Cornell Cooperative Extension.
Source: Office of Government and Community Relations

Table 9. Summary of Cornell University's FY2013 Economic Impact in New York State

(in millions of dollars)

	Direct University Spending		Indirect and Induced Impact of Spending by Employees, Vendors, Contractors		Total Impact
	Payroll	Purchasing/ construction	Impact of employee spending	Impact of vendor and contractor spending	
New York State					
	\$1,369	\$392	\$1,156	\$253	\$3,170
Central New York					
	\$786	\$172	\$544	\$99	\$1,601
New York City and Adjacent Counties					
	\$564	\$209	\$377	\$119	\$1,269

Notes:
Indirect and induced impact estimates based on 2012 IMPLAN data in constant 2013 dollars
(i) Purchasing does not include UNC (unclassified) purchases
(ii) IMPLAN's direct effects may be less than Cornell's spending b/c, according to IMPLAN, Cornell purchased from industries that in 2010 did not exist
(iii) Spending in New York State is shown for Weill, Ithaca, and Geneva campuses, but excludes CCE
(iv) Central New York consists of 18 counties, including those of the Southern Tier
(v) New York City and Adjacent Counties refers to the 5 boroughs plus Nassau, Suffolk, Putnam, Westchester, and Rockland counties
(vi) Payroll is by location of jobs

Source: Cornell University Department of City and Regional Planning

Section III

Cornell University in New York City and New York State

Cornell has a large presence in New York City through Weill Cornell Medical College (WC MC), several Cornell college programs, Cornell Cooperative Extension, and the Cornell Tech campus that is under development on Roosevelt Island. In this report, the largest campus in New York City, WC MC, is analyzed similarly to the Ithaca campus, and the primary impacts reflect activities from payroll, purchasing, construction, students, and patients. It is too early to quantify the impacts of Cornell Tech for this study, but they will be included in subsequent impact studies.

Weill Cornell Medical College

Cornell University has had a large and growing presence in New York City since 1900, when the medical college opened on the Upper East Side. In 2013, Weill Cornell Medical College (WC MC) and the Weill Graduate School of Medical Sciences had 5,844 permanent, non-student employees, an increase of 32 percent since 2007, and payroll in New York State was \$571 million. In FY2013, the medical school paid \$639,000 in local taxes and \$83,000 in voluntary contributions.

Like the Ithaca campus, WC MC contributes directly and indirectly to the economy of its home city. Students

at WC MC spent on average, \$26.9 million on food, books, and other necessities in 2013. Most WC MC students live in university housing but turn to New York City businesses for other goods and services. Employees live in counties within and around New York City and in the tri-state area. (Non-New York State impacts of WC MC are not included in this analysis.)

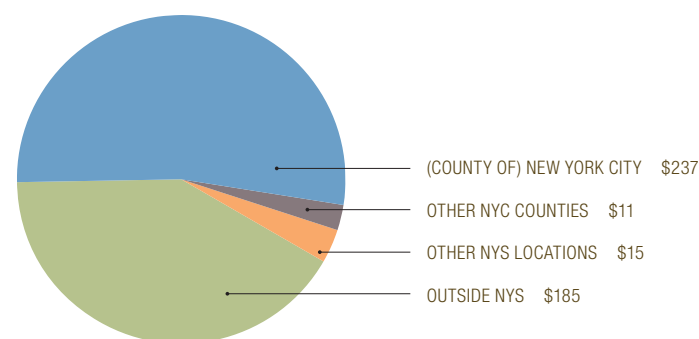
As a top-ranked medical practice, WC MC provided care for 296,592 patients in FY2013. Two-thirds of the patients came from the boroughs of Manhattan, Brooklyn, and the Bronx; one in seven came from out of state. Their visits generated more than \$707 million in revenues. WC MC also contributes to the health-care resources of the New York metropolitan area by providing health screenings and other services that help reduce employee absenteeism and medical expenditures.

In calendar year 2014, the 18-story Belfer Research Center opened, nearly doubling the research space at WC MC. Cornell spent a total of \$129 million on construction at the medical college in 2013.

Figure 6. Weill Cornell Medical College Purchasing by Location of Vendor, FY2013

(in millions of dollars)

Total: \$448 million*



* Includes some construction expenditures

Source: Cornell University Office of Procurement and Business Services

Table 10. Weill Cornell Medical College Economic Impact, FY2013

(in millions of dollars)

Direct University Spending		Indirect and Induced Impact*		Total Impact
Payroll	Purchasing/Construction	Employee Spending	Vendor and Contractor Spending	
New York State				
\$571	\$174	\$377	\$113	\$1,235
New York City				
\$422	\$157	\$188	\$79	\$846
New York City and Adjacent Counties				
\$564	\$166	\$304	\$94	\$1,128

Notes:

Indirect and induced impact estimates based on 2012 IMPLAN data in constant 2013 dollars

(i) Purchasing does not include UNC (unclassified) purchases

(ii) IMPLAN's direct effects may be less than Cornell's spending because, according to IMPLAN, Cornell purchased from industries that in 2010 did not exist

(iii) New York City and Adjacent Counties refers to the 5 boroughs plus Nassau, Suffolk, Putnam, Westchester, and Rockland counties

(iv) Payroll is by location of jobs

Source: Cornell University Department of City and Regional Planning

Cornell Colleges and Cornell Cooperative Extension in NYC

Cornell Tech is a graduate program that fuses educational excellence with technological entrepreneurship and commercial applications. The school offered its first classes in early 2013, in space donated by Google at the company's Manhattan headquarters in Chelsea. In January 2014, construction began on the Cornell Tech campus on Roosevelt Island, with completion of the first buildings scheduled for 2017.

When fully complete in 2037, the Cornell Tech campus will include academic, residential, and corporate R&D space, with more than 2,000 graduate students and hundreds of faculty and staff. The sustainable campus will create unique opportunities for community and research collaborations, furthering the energy and green development goals of the region.

New York City is also home to an extension office of the School of Industrial and Labor Relations (ILR), which has five such offices in cities across the state. They offer classes on topics such as union revitalization, labor-management cooperation, and regulatory compliance. ILR extension staff also work as consultants to employers seeking assistance with dispute resolution and strategic planning.

The College of Architecture, Art, and Planning program in New York City draws faculty and hundreds of students to New York City for coursework and internships.

The College of Engineering's New York City program, Cornell Financial Engineering Manhattan, specializes in analyzing and managing complex financial instruments.

Just outside New York City, the Samuel Curtis Johnson Graduate School of Management runs its Executive MBA program for mid-career business professionals at the IBM Palisades Executive Conference Center in Palisades, Rockland County.

In New York City's five boroughs and on Long Island, Cornell Cooperative Extension (CCE) partners with local agencies to sponsor programs in youth and family development, nutrition and health, and climate change. More than 277,000 New York City residents—youth and adult—participated in a CCE program in 2012.

On Long Island, 108,000 people attended CCE programs on topics ranging from sustainable energy to agriculture and natural resources business management in 2012. CCE has long contributed to the vitality of the region's agricultural and horticultural businesses.

Cornell Cooperative Extension Programming Areas

CCE supports New York State agriculture through programs such as Good Agricultural Practices (GAPS), a model program that reduces the risk of microbial contamination of fruits and vegetables, and High-Tunnel School, which teaches farmers how to extend the growing season and produce higher quality vegetables, fruits, and flowers. The popularity of microbrews, home brewing, and the “buy local” food movement has revived the geographically diverse hops industry in New York, and CCE provides assistance in pest management, farm brewery and cidery licensing, and hops fertility. Other support includes training farm owners in business management, providing assistance at every stage—from creating an agricultural business to moving it in new directions when trends change. CCE specialists also provide training in skills such as milking and herd management, and even mentor the development of value-added products such as condiments flavored with maple syrup.

Cornell University has been a major supporter of the state’s grape and wine industry since the 1880s, offering research and developing more than 50 varieties of grapes specially suited to New York’s soils and climate. More than 1,600 family vineyards and 350 wineries generate more than \$4.8 billion in economic benefits annually for New York State, including \$408 million in state and local

taxes. As a means of supporting the industry’s growth and long-term sustainability, two Cornell Cooperative Extension regional programs—the Finger Lakes Grape Program and the Lake Erie Regional Grape Program—provide research-based education, support, and resources to grape growers in topics including vineyard and pest management practices, new vineyard establishment, farm business management, marketing and business development, and more.

Other key programs contribute to community development and resilience: environment and natural resources, sustainable energy, and climate change; 4-H youth development, and children, youth, and families; nutrition, food safety and security, and obesity prevention; and community and economic vitality. As a result of CCE outreach, lunchrooms in New York schools can offer locally produced fruits and vegetables; youth engage in innovative programming in science, technology, engineering, and math; families can learn how to prevent, prepare, and recover from emergencies and disasters; and businesses and residents can learn how to use energy efficiently, reduce greenhouse-gas emissions, and adapt to changes in the climate. CCE also trains elected officials and local government staff to effectively address issues in their home communities.

Cornell Cooperative Extension: Statewide Reach, Local Engagement

Approximately 1.4 million New York State residents per year participate in CCE programs¹ that are tailored to meet the specific needs of the regions they serve. The CCE programming area that the public most often associates with extension is Agriculture and Food Systems. Agriculture is a \$4.7-billion-a-year industry in New York State. With 36,300 farms statewide, New York ranks among the top 10 in the nation in a diverse range of products, including milk (third nationally), apples (second), grapes, grape juice and wine (third), and fresh market vegetable production (fifth).

CCE programs are funded by a combination of federal grants, state funding, county budget allocations, outside grants, and program fees. County associations use these resources to offer activities that generate additional support from other community organizations, private sources, and branches of government. CCE spending across all categories totaled \$94 million in FY2013 (due to timing of grants and contracts, the system’s expenditures are covered by the previous year’s revenues). CCE spent \$927,000 in FY2013 to renovate and expand its offices in 14 counties. The top categories of spending for CCE include: \$63 million in salaries and wages, \$6 million in contract services, \$4 million in leases and rentals; and \$3 million in teaching materials.

The Value of Volunteering

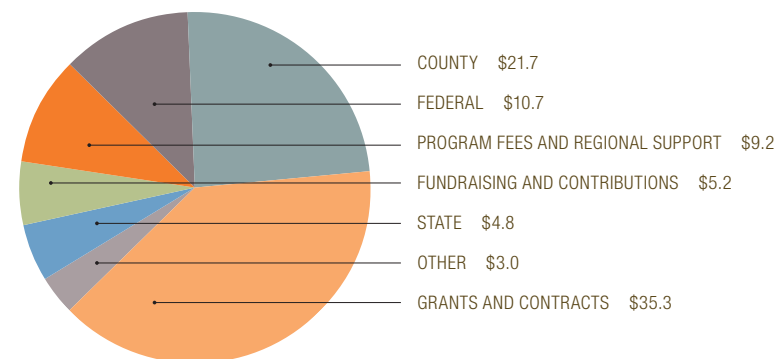
A key role of Cornell Cooperative Extension staff members is to mobilize volunteers who focus on areas of need that might go unmet if the host community had to pay for the services. Volunteer activities ranged from 4-H youth fairs to local water-quality monitoring. The most volunteer hours by far were dedicated to youth programs (846,438); food and nutrition programs are second, with 148,017-recorded volunteer hours. The number of volunteer hours for all CCE programs in FY2013 was 1.1 million. In 2013, the advocacy group Independent Sector set the value of an hour of unpaid contributions in New York State at \$26.45, based on prevailing wages plus benefits.

¹As the land-grant institution for New York State, Cornell enters into formal agreements with the federal government to provide and administer extension work. To support these efforts, Cornell receives approximately \$10.7 million in federal funds. Funding from county governments and the State of New York constitutes the majority of support for the Cornell Cooperative Extension county association system. NYS County Law 224 provides a legal mechanism for the creation of county or multi-county associations, and these entities are 501(c) sub-governmental agencies that employ local and regional extension staff. County Law 224 also provides state matching funds to the county associations receiving county appropriations from a formula managed by Cornell University. The funding from these three sources totals \$37,177,021.

Figure 7. Cornell Cooperative Extension Revenue Sources, FY2013

(in millions of dollars)

Total: \$89.9 million



Source: Cornell Cooperative Extension

Table 11. Summary of Economic Impact of Cornell Cooperative Extension on New York State, FY2013

(in millions of dollars)

	Direct University Spending		Indirect and Induced Impacts*		Total Impact
	Payroll	Purchasing/Construction	Employee Spending	Vendor and Contractor Spending	
New York State	\$64	\$229	\$41	\$116	\$450

Notes:
 Indirect and induced impacts are in terms of dollar values of output
 * Indirect and induced impact estimates based on 2012 IMPLAN data in constant 2013 dollars
 (i) Payroll is entirely from a combination of federal, state, and local funds, as well as grants

Source: Cornell University Department of City and Regional Planning

CCE uses a more conservative estimate of \$19.50 per hour for most volunteers. By that measure, CCE volunteers contributed \$21.5 million worth of service in FY2013.

In addition to CCE's efforts, a large segment of Cornell students, faculty, and staff spend significant time and expertise on volunteer activities. In Tompkins County, there are few nonprofit organizations that do not have a Cornell representative serving on their boards. Cornell's Public Service Center placed 7,500 student volunteers in community organizations in FY2013 for a variety of purposes, from tutoring children in Ithaca schools to painting, cleaning, and landscaping for schools and human service agencies. Together, the students performed more than 154,362 hours of service, valued at \$4.4 million.

A separate program launched by the Samuel Curtis Johnson Graduate School of Management in 2008 places second-year MBA students on boards of Ithaca area nonprofit organizations such as theater companies, food banks, and social service agencies. Students in the Johnson Board Fellowship work on consulting projects for the organizations, drawing on the expertise they have developed in their coursework at Johnson.

Most of the fraternities and sororities at Cornell have a commitment to charitable contributions as part of their charters. In FY2013, chapters at Cornell raised \$206,208 and volunteered 23,516 hours of community service (dollar value: \$675,615), most of it for the benefit of human service agencies in Tompkins County.

Cornell Alumni

Cornell University has a large and devoted alumni body, numbering more than 245,000 in 2013. Of the alumni whose addresses are known, one quarter live in New York State. Recent graduates of Cornell University tend to stay in New York State in larger proportions than the alumni body as a whole. In 2013, 38 percent of the 2013 graduating class from the Ithaca campus stayed in New York State, the majority in New York City and its suburbs.

An increasing number of Cornell graduates are choosing to remain in Tompkins County. In 2013, 1,135 graduates stayed in Tompkins County, representing 17 percent of their graduating class. The number who stayed in Ithaca—either to pursue an advanced degree or start a career close to their alma mater—was nearly double the number of 2007 graduates who remained in the area.

The farther alumni are from their graduating year, the more likely they are to live outside New York State. By their tenth-year reunion, New York residency among Cornell alumni levels off at about a thousand per class year. In that first decade after graduation, however, alumni become active consumers in the state's economy as they establish their personal and professional lives. These young alumni also contribute to the economy in another important way—through their talents and knowledge—helping fuel innovation and entrepreneurship in New York State.

Promoting Economic and Community Development in New York State

Cornell Tech represents a partnership between government and higher education that can help communities, states, and the nation as a whole meet the challenges of a globalized economy. New York City provided the Roosevelt Island site and new infrastructure. Cornell is training the workforce that will meet the needs of existing local businesses, teaching aspiring entrepreneurs to start new companies in the city, and encouraging talented graduates to put down roots in New York State.

In 2011, recognizing the value of such partnerships in stimulating economic development, New York Governor Andrew Cuomo named Cornell President David Skorton co-chair of the Southern Tier Regional Economic Development Council (REDC), one of 10 such councils launched by Cuomo to drive local economic development and improve the state's business climate. Each council proposes projects that leverage the strengths of its region and receives state grants to implement them.

In FY2014, at the recommendation of the Southern Tier REDC, Cornell was awarded a New York State grant and designation as lead entity to create the Southern Tier Innovation Hot Spot, partnering two large research universities (Cornell University and Binghamton University), Corning Incorporated, and the Ceramics Corridor Innovation Center to encourage formation and growth of startup companies. The plan is to establish a membership organization of four business incubators: one in Binghamton, two in Ithaca (one of these is the McGovern Center at Cornell), and one near Corning. The Hot Spot provides incubation services to the region, including to the member incubators.

Cornell, Ithaca College, and Tompkins Cortland Community College have joined forces to develop Rev: Ithaca Startup Works, which will open in renovated space in the city's downtown this fall. Affiliation with the partners is not necessary to use space in Rev or benefit from its resources and programming. Rev members are eligible for tax benefits through the Southern Tier Innovation Hot Spot. Upon graduation from Rev, members may be eligible for further tax benefits through START-UP NY, a program that offers companies tax benefits for growing employment in New York State, in alignment with the state's colleges and universities.

Cornell University is as strong as its home communities and state. Initiatives like Rev and Cornell Tech serve the needs of Tompkins County and New York, as well as the university.

In addition to generating this and future economic impact studies, the analysis process that informed this report can be used to evaluate new opportunities and determine Cornell's role in responding to them. In a global economy where the only certainty is that things will change, this process will enable all parties to position themselves for continued success.

Conclusion

Cornell University's economic impact in New York State is reflected through a wide range of activities. The traditional measurement includes direct, indirect, and induced impacts of spending generated by payroll, purchasing, construction, students, and visitors. However Cornell's land-grant status, its connection to the state university system, its location in rural upstate New York, and its innovative Cornell Tech partnerships require a different approach to reflect its many and complex connections and interrelationships with the state, counties, and many communities in which the university has a presence.

Through the base indicators of payroll, purchasing, and construction alone, Cornell University generated over \$3.2 billion of economic activity in New York State in fiscal year 2013. In Central New York, where the university is among the largest employers, Cornell drove \$1.6 billion of economic activity related to payroll, purchasing, and construction. The impacts of students and visitors to the Ithaca campus generated \$411 million in direct and indirect spending, augmented by \$10.7 million in total taxes, fees, and voluntary payments to governments and community institutions. Some of the voluntary payments leverage considerably more external funding and enable long-term enhancements to community infrastructure and development. The activities of CCE throughout the state had an impact of \$450 million, based on the same indicators. Volunteering through CCE and the university exceeded \$27 million in services, with benefits to Tompkins County and state residents. The community development aspects, while not quantified in this report, allow a level of stability for economic activity.

The university will regularly conduct economic impact analyses to track the effects of Cornell decision-making over time. The analytical tools employed in this study can be used to predict the effects and results of different economic development scenarios and proposals at the state, regional, and local levels. In this way, Cornell can better shape and grow programs of benefit to our communities. In particular, the university can contribute meaningful data and analyses to discussions and decision-making about the economic future of Tompkins County, Central New York, and New York State through START-UP NY, the Southern Tier Regional Economic Development Council, Innovation Hot Spots, and other initiatives.

Appendix: Methodology

Data that show what Cornell spends on payroll, purchasing, and construction provides a direct measure of the university's impact on the local, regional, and state economy. Each expenditure also produces what economists sometimes call indirect and induced effects, known together as multiplier effects.

Cornell's indirect impact is measured by tracking spending by the companies from which it buys goods and services—how they use the money they receive from Cornell to pay their own employees and to cover the cost of equipment, supplies, telephone services, and other overhead.

The university's induced impact is based on routine household spending—on rent, food, childcare, etc.—by Cornell employees and by the employees of the university's suppliers.

Multiplier effects are measured with quantitative economic models. Findings for this report are based on a composite model comprising a Social Accounting Matrix (SAM) model, a Computational General-Equilibrium model (CGE), Structural Path Analysis (SPA), and county- and state-level IMPLAN data and software, which are used by private institutions and local, state, and federal governments throughout the United States for economic impact analyses.

A SAM model can be envisioned simply as a table with hundreds of rows and columns, with all industries (plus households) listed down the side as producers, and the same industries (and households) listed across the top as consumers.

EXAMPLE: A simple SAM matrix shows how Cornell spending can be tracked in the local economy. The university receives tuition from a student. Cornell pays its employee, uses the supermarket's catering services, and buys fuel from the oil company (direct impacts). The employee is able to buy groceries and fuel (induced impacts). The supermarket is able to hire the student for part-time work (an indirect impact). A working SAM goes on to show the oil company hiring non-student drivers (indirect), and how the drivers spend their wages (induced)—and does the same for every sector. The finished matrix illustrates the ripple effect of Cornell spending throughout the local economy. To estimate the economic impacts of Cornell spending, a Social Accounting Matrix is manipulated algebraically to form a SAM model.

A SAM model may be used to calculate the flow of payments for goods and services across different industrial sectors, and among households, institutions, and industries. A SAM model also may be used to examine the differential impacts of expenditures on various demographic groups. Spending by any consumer—in this case, the university—is allocated across all of the producing industries and the household sector. Each of the producer industries purchases its own distinct set of inputs (such as raw materials used to make a product) from other industries and households in order to produce the output it sells to Cornell.

A SAM model allows us to trace the impact of each dollar of university spending as it ripples through other industry sectors in Tompkins County, and to translate the allocation of spending across industries into estimates of employment and wages. And it allows us to repeat that calculation for the surrounding counties, for the Central New York region, and for New York State. Through each successive round of spending, the money that was originally spent within the county is diffused throughout the broader economy.

The SAM model is good for big-picture analyses when the amounts of expenditures are not large. But it tends to exaggerate the magnitude of the impact made by a given economic player when expenditures are in the amounts of Cornell's operations. This exaggeration occurs because SAM models portray only responses on the supply side of markets to changes in demands (in the form of expenditures), without taking into account supply constraints, compensating adjustments in prices, or alternative uses of resources.

IMPLAN data and software create a localized model to investigate economic transactions in a geographic region. But the model is also demand driven, and it assumes complete elasticity of response on the supply side, or that whatever is demanded will be forthcoming. Neither IMPLAN nor SAM can be used to identify bottlenecks in the economy.

Recognizing these limitations, the Cornell analysts for this report have constructed a Computational General-Equilibrium (CGE) model to support more complete analyses of market behavior. A CGE model also permits the study of impacts of specific government policies. By itself, a CGE model cannot supply as detailed an accounting of Cornell's impact as SAM modeling, but it produces a more realistic understanding, and modeling, of those impacts throughout the economy.

A second limitation of SAM models is that the multiplier effects they estimate tend to be "black box" in nature. So for this report, Cornell analysts complemented SAM modeling with Structural Path Analysis, which decomposes multiplier effects so that one may discern the route of impacts in the local economy.

In the future, Cornell will apply the approach of using multiple, complementary models to economic analyses for each fiscal year, producing accurate accounting of Cornell's impact over time, in addition to one-year snapshots. Because these models can be applied on a regional and statewide basis, Cornell analysts and administrators also will be able to use them to evaluate opportunities for economic development, and determine whether and how the university should support those opportunities.

Table 12. A Simple SAM Model

	Cornell	Cornell employee	Cornell student	Supermarket	Oil Company	Total Received
Cornell			Tuition			T
Cornell Employee	Wages					W
Cornell Student				Wages		W
Supermarket	Catering	Groceries	Groceries		Catering	CC+GG
Oil Company	Fuel oil	Fuel oil		Fuel oil		FFF
Total Expended	W+C+F	G+F	T+G	W+F	C	

Acknowledgements

It takes many contributors from across Cornell University to prepare a report of this breadth, depth, and complexity. This report has been prepared entirely in-house and with a new composite model developed by faculty and students in the Department of City and Regional Planning. The model will allow for regular and consistent assessments of Cornell University's impact on the economic and community development of its home communities and state. We sincerely thank everyone who helped along the way.

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