

公的高等教育システムの経済的インパクト：  
ニューヨーク州立大学システムの事例

**Economic Impact of Public Higher Education System:  
A Case Study of the State University of New York**

長 沢 誠

Makoto Nagasawa

***1. Introduction: University as a Catalyst for Regional Economic Development***

Regions benefit economically in the short- and long-term budgetary cycle from having a university in their localities. University activities such as purchasing goods and services generate business that, in turn, employs more inhabitants, and these inhabitants purchase goods and services from other local businesses. In parts of the United States, for example in California, the establishment of new campuses is still a significant concern (e.g., University of California, Merced, established in September 2005). In other parts of the world, however, for example in Western Europe, policy interest in the issue of regional impact seems to have come to the end of a trend. The key elements from which the tide of new establishment of universities derives are: shifting patterns of governmental allocation, the accountability surge, budgetary conditions of institutions, and demographic changes, as well as labor market demands. A severe higher education market requires institutions to develop competitive financial stability, yet paradoxically, increasing market competition, cuts to university budgets, and decreases in the relevant age cohort often close down programs, departments, and institutions.

However, given rising participation in higher education, the knowledge-intensive reality associated with modern products, and development of financial strategies, there are emerging policy debates and changes in the areas of regional economics and science and technology policy (Florax, 1992), and higher education institutions certainly play many significant roles in these areas. Particularly, from a policy perspective, universities are pivots of knowledge distribution to communities, businesses, and markets, locally and municipally. In

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\* ながさわ・まこと  
埼玉大学国際本部国際企画室准教授

this role, universities could be perceived as centers of excellence, science parks, technology laboratories, network linkages, licensing agencies, and so forth. Therefore, study of the regional impact of universities can be considered quite interesting and significant, especially from a policy point of view.

This study then poses the following questions: What is the economic impact from a comparative perspective in contemporary regional studies in the U.S., and what is the role that higher education institutions have played regarding contribution to regional economic development? One finds that the instruments for economic impact studies vary, depending on each regional project. Moreover, the interpretations of the outcomes are conditional on their particular objectives. Still, higher education institutions clearly contribute to regional economic development in various dimensions through their business volume. So, a sequential question would be: How do the different studies show significant divergence from one another in terms of changing trends, and by utilizing what types of datasets? To that end, this report will review the pertinent literature and project reports and will provide recent economic impact data, regarding the following three topics:

- 1) Economic concepts and the study of higher education
- 2) Economic impact studies and analysis of regional economic development
- 3) Analysis of the economic impact of the State University of New York (SUNY) System: 64 campuses, in the fiscal year of 2004

The analysis will examine various types of economic impact studies regarding higher education in the U.S. Consequently, SUNY's economic impact will be discussed with regard to its 64 institutions (34 state-operated institutions (University Centers and Doctoral Degree Granting Institutions, University Colleges, Technology Colleges) and 30 community colleges) in the State of New York Economic Development Regions. (See Appendix A and B.)

## ***2. Economic Concepts and the Study of Higher Education***

*Economics* is often described as human needs and material possibilities, and the problem of scarcity. It is also represented by the basic concepts of: *Market Mechanism* (e.g., exchanges based on price and self-interest, and the law of demand and supply); *Opportunity Cost* (e.g., limited sources, and value of the next best alternative); *Efficiency* (e.g., absence of waste, maximization of output); and *Equity* (e.g., distribution of income and material goods, and fairness). In particular, the significance of economics in education had already

been noted in the era of Adam Smith, the author of *The Wealth of Nations* (1776). Although the currently recognized notion of human capital emerged later, his notion of human capital<sup>1</sup> is as follows.

*“... the acquired and useful abilities of all the inhabitants or members of society. The acquisition of such talents, by the maintenance of the acquirer during his education, study, or apprenticeship, always cost a real expense, which is a capital fixed and realized, as it were in his person. Those talents, as they make part of his fortune, so they do likewise of that of the society to which he belongs”* (Smith, 1991).

The benefits of investing in formal education were clear in early times. In history, many economists have disputed with rival theorists, sometimes based on academic factions, concerning the question of whether investing in education generates not only personal returns but also social benefits. The idea of the economics of education, however, has been recognized through the work of Theodore Schultz (1961), a Nobel Prize scholar, who argued that education is not only a consumer good as generally acknowledged, but also an investment economically important for both the individual and society.

The reflections of economic theory have left a legacy of contemporary debate as to its relevance when applied to the study of higher education. Together with the “peculiarities” of higher education and the risks of “market failures,” as Teixeira (2006) states, the resistance to applying economic concepts (e.g., use of resources, economic effects, and economic motivation) to higher education causes some discomfort among many economists, related scholars, and practitioners. It is also true, however, that there have been long-lasting debates over the “murky” value of higher education in terms of business volume, with regard to the economic activities as listed below:

- Producing and selling of educational services
- Pricing of products
- Investment in properties and endowments

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<sup>1</sup> *Human Capital Theory*: Individuals and societies spend resources on human capital (e.g., schooling, on-the-job training, healthcare, migration, home activities), motivated not only by consumption but also investment considerations, motivations, with for the purpose of skill development, increased productivity in market and non-market activities, and income promotion. Noted authors in the field are Theodore Schultz, Jacob Mincer, Gary Becker, etc. Regarding human capital, Florax (1992) states, “with respect to education the validity of the main train of thought of the human capital theory, viz., education being the prime cause for productivity differences for which income differentials can be used as a proxy, is corroborated in recent research” (p. 52).

- Multi-purpose entities
- Nonprofit segments
- Multiplicity of customers
- Controlling supply and selecting customers
- Production subject to technological and economic constraints
- Uncertainty in the production function

The problem with the peculiarity of expenditure on education and related economic activities is also due to the fact that the intellectual, moral, and artistic segments of higher education are acquired as an instrument/investment, as well as for their consumption benefits, regardless of industrial efficiency. The acquisition of higher education is consequently the byproduct of a combination of various investment and consumption motivations, and many of them are dissociated from any economic purpose (Marshall, 1961). Yet, why do students attend higher education? And, why do governments intervene in the higher education sector? It's because, despite such peculiarities of the higher education sector, the contribution of higher education is by and large to develop skills, to improve productivity in market and non-market activities, and to enhance potential income and growth. In addition, as stated by Schultz (1961), investment in higher education promotes economic growth in two basic ways: promoting technological progress and increasing the productivity of labor. The merits of these are not only *private*, but also of course *public*.

In addition to explaining various benefits of higher education, economic theories can be a very useful tool for the analysis of the current system of higher education as well as recent trends in higher education policy. In fact, measuring the business volume of higher education institutions has been common in particular to studies of the *economic impact* in the region where the institutions are physically located. The discussion in the following section, therefore, will compare various economic impact studies conducted by many national/regional agencies and organizations in U.S. The main contribution of this comparative analysis is to examine the theoretical frameworks and methods used to measure the regional contribution of higher education institutions, which are developed further in the final section analyzing the contribution of the SUNY system.

### 3. *Economic Impact Studies and Analysis of Regional Economic Development*

Economic analysis of higher education institutions and systems has evolved, accompanied by increasing interest in the notions of *performance* (or *accountability* to funding), *efficiency*, and *effectiveness*. Accordingly, changes in governance along with trends such as privatization, deregulation, and shifting funding structure (e.g., cross-subsidization) have become familiar to personnel in higher education and areas beyond. Along with some economic-driven reality, theoretical and political interest in the regional role of higher education institutions has been rising since the 1960s. (Yet, of course, the everyday interaction between universities and their respective local regions has a longer history.) Among others, Raymond Florax (1992) rationalizes the significance of studying the regional economic impact of higher education institutions:

*“Not only for such obvious matters as the lodging of the university population, the local buying of goods and services, and the recruitment of students and employees. Also the decision to establish a ‘regional’ university, and the control over universities have in the past have been policy issues at the local and regional level. It is therefore more obvious to speak of a reappearance of the interest in regional impacts of universities, than to proclaim the discovery of a new phenomenon (p.5).”*

One aim of economic impact studies is to visualize the economic effects of higher education institutions as reflected in local and state economies. The cultural, intellectual, and social impacts of universities are well documented, and the value-added benefits of universities are not restricted only to economic results. Nevertheless, more specifically, the economic effects of universities on their respective regions are substantial, and this impact plays an increasingly significant role in terms of public investment in higher education. States attempt to develop and stabilize their economies, mainly based on calculations by public administration. Given the variety in studies of economic impact, some comparative views are introduced accordingly.

Assessments of economic impact commonly include total spending, employment, and fiscal impacts of higher education institutions, the expenditures of the institution itself, its auxiliary organizations, and students who migrated to the locality to attend the institution. For example, one of the earliest standardized reports in the system, *The Economic Impact of SUNY's Community Colleges on the State of New York* (1988), utilized the Ryan-New Jersey

model, whose calculations of direct economic impact<sup>2</sup> derive from 1) college expenditure, 2) employee expenditure, and 3) student expenditure.

These components were later calculated on various levels, e.g., the state, regional and individual campus level. According to a report for the California State University (CSU) by Ted Egan and associates (2004), the significance of the impact is enhanced by CSU's large enrollment<sup>3</sup>, through the impact on the economy of the state and the region as the "home" where the campuses are located. Given the ample size of the enrollment and scale of activities in succeeding economic cycles, he asserts that "this [CSU's economic] impact is often under-appreciated." (p.1). Similarly, in studies for the Pennsylvania State System of Higher Education (1997) and the University of Texas System (2004), what is typically termed "economic impact" is the measurement of the business volume of the universities' in-state expenditures, and the in-state *re-spending* of university-related expenditures by recipients; this phenomena of additional economic volume by direct and indirect effects is called the *multiplier effect*<sup>4</sup>. (See Appendix C.) That is, the gross spending in the economy is the accumulation of the original spending in addition to the progressively smaller, subordinate cycles of spending within the economy. More importantly, this total economic impact generates a certain number of new jobs (*total employment impact*), and certainly the tax revenues for state and local governments are essential byproducts that are derived from the original economic activity. The causes of an institution's economic impact are observed in detail in the report of the National Association of State Universities and Land-Grant Colleges (NASULGC) (1997), which looks at multiple dimensions across various functions: the lending of university faculty to companies, government agencies, and non-profit organizations; collaboration with businesses to commercialize products and processes developed in university research; transfer of various technologies to external contractors; and, establishment of private companies to commercialize the knowledge that has been developed with universities.

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<sup>2</sup> These three streams of economic activity are calculated, and an economic multiplier is applied to estimate the additional business volume or indirect economic impact that resulted from the direct expenditures. For this particular report, a U.S. Department of Commerce publication recommended a multiplier of 2.1 for higher education expenditures in New York State (1988).

<sup>3</sup> *i.e.*, 443,280 in the college year 2002-2003: *cf.* SUNY system: 417,583 in the academic year 2007.

<sup>4</sup> To identify regionally as well as categorically sufficient multipliers, IMPLAN is a commonly used software package in economic impact studies to calculate the total economic impact on the state - a methodology consistent with similar analyses across the nation. IMPLAN was originally developed in the 1970s for use by the U.S. Forest Service. For details, see [www.IMPLAN.com](http://www.IMPLAN.com). The local multiplier effect (as also discussed in the fourth section of the SUNY case in this paper (see Appendix C)) specifically refers to the effect that spending has when it is circulated through a local economy. For example, when the building of a sports stadium is proposed, one of the suggested benefits is that it will raise income in the area by more than the amount spent on the project.

What is more, universities also attract substantial amounts of funding (and again, the subordinate economic cycles) from outside their respective states in the form of federal research grants and contracts, student aid, and out-of-state students' tuition and fees. These revenues are particularly important because they signify money that otherwise would not make a contribution to a state's economy, which is in general internally generated (NASULGC, 2001). Moreover, a number of reports introduce "marginal returns" on investment in higher education institutions in various domains, such as *health, labor market, citizenship and value, and parenting* (The Bedford Group for Lifecourse and Statistical Studies, Institute of Education, 2003).

Although there is no standard, uniform way for measuring what universities provide (NASULGC, 2001), more focused and sophisticated schemes have emerged to account for the impact they have beyond the campus sites, and it is increasingly common to use multipliers of economic impact. It is also true that some states mandate conducting an economic-impact study in accordance with prescribed criteria. Even though it is still a challenge to quantify all the various benefits of a university's activities in business volume within their own state, it is meaningful to repeatedly remind public administrators and taxpayers about the return on their investment in higher education institutions, particularly during periods of economic uncertainty. Therefore, in the following section the significance of the economic impact study will be emphasized based on analysis of a public higher education system: the State University of New York (SUNY) System (64 campuses), utilizing the accumulated financial data for fiscal year 2004.

#### ***4. Economic Impact of the State University of New York System on New York State***

Among others, the following description in the report by the Commission on Independent Colleges and Universities<sup>5</sup> (CICU) (2006) illustrates the regional/economic function of higher education institutions, particularly in the State of New York, and gives a historical perspective (even though the analytical part of the CICU report certainly puts the emphasis on the private sector).

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<sup>5</sup> A statewide association representing the public policy interests of the chief executives of more than 100 independent (private, not-for-profit) colleges and universities in New York State. For the details, see the following URL: <http://www.cicu.org/>.

*“New York State is a land of contrasts, boasting an economy of astonishing breadth and diversity.... New York City has been a significant financial center from the earliest years of the republic. [Statewide,] its location, size and natural endowments, plus the industry and creativity of its residents, have established the state as a powerhouse in a number of industry sectors, particularly financial services, manufacturing and higher education.... [However,] with manufacturing in free fall [since the 1960’s, e.g., the shrinkages of General Electric and Eastman Kodak] and finance and real-estate sector endangered, New York’s traditionally strong sector is culture and scholarship. The state’s institutions of higher learning have a long history<sup>6</sup>.... While acknowledged as a critical part of the state’s cultural and intellectual heritage, colleges and universities were not traditionally considered economic engines.... This perspective has changed. In four of Upstate New York’s leading cities (Binghamton, Buffalo, Rochester and Syracuse) economies founded on manufacturing have evolved to a new economic reality in which a university is either the largest (Syracuse and Rochester) or one of the largest employers (pp.1- 5).”*

The SUNY system is a major contributor to the state economy. The 64 geographically dispersed campuses generate educational opportunities for residents virtually everywhere in New York State as the nation's largest comprehensive system of public higher education. (See Appendix A.) As for the economic impact in fiscal year (FY) 2005, according to a recent report by the SUNY System Administration (2007), SUNY generates 8 dollars in total spending for every dollar invested by New York State. The FY 2005 all funds budget of 9 billion dollars that included 3 billion dollars in state aid resulted in *23.7 billion dollars* in total economic impact. Moreover, the three state-operated academic-intensive centers leveraged 1 billion dollars in private and venture capital support, 4.5 million dollars in state aid, and 140 million dollars in federal aid to promote the quality of teaching, research and economic development. As mentioned above, in economic impact studies the essential components that determine the economic effects are expenditures by institutions, employees, and students. Thus, what the table below indicates is significant in order to measure the fundamental dynamics of SUNY's economic activities.

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<sup>6</sup> Columbia University was established as King's College in 1754, the oldest higher education institution in the state and the fifth oldest in the nation. New York University was founded in 1831, Fordham University in 1841, the University of Rochester in 1850, Cornell University in 1868 and Syracuse University in 1870.

**Table: the Summary of the SUNY System in Academic Year 2007**

<b>Campus</b>	<b>64</b>
<b>Total Enrollment (Headcount)</b>	<b>417,583</b>
Undergraduate Enrollment	377,291
Graduate Enrollment	40,292
State Operated Enrollment	208,516
University Centers	82,152
Other Doctoral	12,984
Comprehensive Colleges	89,059
Technology Colleges	24,321
Community College Enrollment	209,067
<b>SUNY Employees (Headcount)</b>	<b>82,526</b>
	<b>30,916</b>
<b>Faculty</b>	<b>(48.3% Full-Time)</b>
	17,051
State Operated	(61.4% Full-Time)
	13,865
Community Colleges	(32.1% Full-Time)
<b>Non-Faculty</b>	<b>51,610</b>
State Operated	40,258
Community Colleges	10,725
System Administration	298
University-Wide Programs	329

Source: [http://www.suny.edu/About\\_suny/fastfacts/sunyFastFacts.cfm](http://www.suny.edu/About_suny/fastfacts/sunyFastFacts.cfm)

In light of the exploration of economic theories in higher education, the concepts of the economic impact study, and examples of some billion-dollar impacts, this study still poses some questions: How has SUNY's gross economic impact been calculated? And, how does it measure the *regional* economic impact of the SUNY system? The following section will offer an explanation in response to this line of inquiry.

First, as the main theme of this paper, to be compatible with the economics-oriented scheme, the data were standardized in the Economic Development Regions. The New York State Department of Labor conducts various labor market analyses in ten Economic Development Regions across the state. (See

Appendix B.) These economic districts help employers and economic developers by providing data about wages, economic trends, and availability of labor. This economics-oriented regional classification is applied in the study of the regional economic impact of the SUNY system. The data was accumulated in the summer of 2006 under the guidance of Dr. Robert Kraushaar, Associate Provost for Engineering and Technical Education, SUNY System Administration. Gathering extensive data on the 34 state-operated institutions and 30 community colleges statewide involved a number of SUNY's administrative units, i.e., the Office of Academic Affairs, Legislative Relations, Office of Community Colleges, Office of Business and Industry Relations, Office of Finance, and Office of Institutional Research and Analysis. The software utilized was Oracle Discoverer, a business intelligence tool for ad hoc queries, reporting, and data analysis. The mechanically and manually accumulated data were modified according to regional classification based on the Economic Development Regions, and the *NYS Economic Development Regions Multiplier* was applied in order to be appropriate to the specific figures for the multiplier effects by regions and by type of economic activity: education and construction. The data source was the accumulation of FY 2004 as is seen in Appendix D (which shows a gross economic impact of 18 billion dollars for the entire SUNY system). When this regional analysis required detailed numbers, the dataset of FY 2006 was insufficient, so FY 2004 was used instead due to the completeness of the details. As a result, the following is SUNY's economic impact in the ten Economic Development Regions. (For details, see Appendix A and B for the geographical distribution.)

### Capital Region

The combined budgets of the six Albany-area colleges (University at Albany, Empire State College, Adirondack Community College, Columbia-Greene Community College, Hudson Valley Community College, Schenectady County Community College) and SUNY System Administration and University-wide Programs generated a total of 2 billion dollars of economic activity for this region. The colleges had a combined enrollment of 49,155 students and 15,191 employees across the campuses, which granted more than 10,127 degrees in FY 2004. These SUNY institutions had capital construction budgets of 44.4 million dollars and they attracted millions of dollars in research funds in the areas of nanoelectronics, biotechnology, education, semiconductor manufacturing technology, public health, criminal justice, cyber security, information assurance, workforce development, and other areas.

<b>SUNY's Economic Impact on the Capital Region</b>	
(The region's statistics include the System Admin and University-wide Programs)	
<b>Campus</b>	6
<b>Enrollment</b>	49,155
<b>Employees (direct &amp; indirect)</b>	15,191
<b>Alumni</b>	248,012
<b>Degree Since Inception</b>	293,241
<b>(A) Economic Impact (direct &amp; indirect)*</b>	<b>\$1,964,468</b>
<b>All Funds (Institutions &amp; Employees)<sup>7*</sup></b>	\$925,912
<b>Capital Construction*</b>	\$44,413
<b>Student (including visitor)<sup>8*</sup></b>	\$474,305
<b>(B) Total State Support<sup>9</sup> *</b>	<b>\$173,379</b>
<b>Economic Impact Per \$ of State Support (A/B)</b>	<b>\$11.33</b>

\*These figures are indicated in thousands. Source: See Appendix D.

### Central New York

With unique strengths in high-tech science and medicine, the six Syracuse-area SUNY colleges received budgets from the state of more than 170 million dollars in FY 2004 that contributed to the Central New York economy. The combined budgets of Upstate Medical University, Environmental Science and Forestry (ESF), SUNY Oswego and SUNY Cortland, and Cayuga and Onondaga Community Colleges represent a total of more than 2 billion dollars of economic activity for the region. These SUNY institutions had a combined enrollment of 30,986 students and 19,555 direct and indirect employees on campuses that granted more than 5,724 degrees in the last year. These colleges had capital construction budgets of 24 million dollars and they

<sup>7</sup> The figures include the following categories: Core Operating and Self Supporting Programs, Hospital, Residence Halls, Campus-related Foundations, Sponsored Research and Administration etc.

<sup>8</sup> According to the report by CICU (2006), "Market research firm Harris Interactive conducted a national poll of student spending and concluded that the average annual discretionary spending per undergraduate student was \$3,470. Graduate students were not surveyed; spending of graduate students is expected to be the same for purposes of this study. Actual student spending will vary markedly by campus, based on the average household income of student families and the location of the college (e.g., the opportunity for off-campus spending)" (p.7). As for the Visitor Spending, the Center for Governmental Research Inc. (CGR), a nonprofit center for objective policy analysis and pragmatic change, consulted three economic impact studies of individual campuses that gathered detailed information on visitors. It reported the similar findings on the visitors' spending range from \$551 to \$676 per student. CGR adopted the mean of the three estimates, \$580 per student (CICU, 2006).

<sup>9</sup> Includes Direct State Support and Fringe.

attracted millions of dollars in research funds in the areas of plant, animal, and environmental biotechnology, homeland defense, public safety, medicine, workforce development, sports marketing, and other areas.

<b>SUNY's Economic Impact on the Central New York</b>	
<b>Campus</b>	6
<b>Enrollment</b>	30,986
<b>Employees (direct &amp; indirect)</b>	19,555
<b>Alumni</b>	187,833
<b>Degree Since Inception</b>	222,087
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<b>(A) Economic Impact (direct &amp; indirect)*</b>	<b>\$2,076,280</b>
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<b>All Funds (Institutions &amp; Employees)*</b>	\$964,474
<b>Capital Construction*</b>	\$24,094
<b>Student (including visitor)*</b>	\$245,558
<b>(B) Total State Support *</b>	\$171,189
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<b>Economic Impact Per \$ of State Support (A/B)</b>	<b>\$12.13</b>

\*These figures are indicated in thousands. Source: See Appendix D

### Finger Lakes

The five SUNY colleges located in the nine counties provide key economic development resources for Finger Lakes. The colleges (SUNY Brockport, SUNY Geneseo, Finger Lakes Community College, Genesee Community College, and Monroe Community College) had combined expenditures of 1 billion dollars in FY 2004, capital construction budgets of 10 million dollars, and attracted millions of dollars in research funds in the areas of retail trade, service, teacher education, computer science, tourism, small business development, and other areas. They enrolled over 42,662 students, created more than 11,000 employment positions, and granted more than 7,935 degrees in FY 2004.

<b>SUNY's Economic Impact on the Finger Lakes</b>	
<b>Campus</b>	5
<b>Enrollment</b>	42,662
<b>Employees (direct &amp; indirect)</b>	11,003
<b>Alumni</b>	199,093
<b>Degree Since Inception</b>	235,401
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<b>(A) Economic Impact (direct &amp; indirect)*</b>	<b>\$1,067,372</b>
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<b>All Funds (Institutions &amp; Employees)*</b>	\$392,408
<b>Capital Construction*</b>	\$10,110
<b>Student (including visitor)*</b>	\$340,315
<b>(B) Total State Support *</b>	<b>\$96,184</b>
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<b>Economic Impact Per \$ of State Support (A/B)</b>	<b>\$11.10</b>

\*These figures are indicated in thousands. Source: See Appendix D

### Hudson Valley

The eight SUNY institutions located within the seven counties that comprise New York's Hudson Valley region provide key economic development resources for the area. The colleges (Purchase College, SUNY New Paltz, Dutchess Community College, Orange County Community College, Rockland Community College, Sullivan County Community College, Ulster County Community College, and Westchester Community College) had combined total expenditures of 1 billion dollars, capital construction budgets of 24 million dollars and attracted millions of dollars in research funds in the areas of design, engineering, social sciences, education, small business development, public safety, and other areas. They enrolled 48,866 students, created more than 11,090 employment positions, and granted more than 7,034 degrees.

<b>SUNY's Economic Impact on the Hudson Valley</b>	
<b>Campus</b>	8
<b>Enrollment</b>	48,866
<b>Employees (direct &amp; indirect)</b>	11,090
<b>Alumni</b>	202,521
<b>Degree Since Inception</b>	239,454
<b>(A) Economic Impact (direct &amp; indirect)*</b>	<b>\$1,369,078</b>
<b>All Funds (Institutions &amp; Employees)*</b>	\$482,474
<b>Capital Construction*</b>	\$24,995
<b>Student (including visitor)*</b>	\$441,028
<b>(B) Total State Support *</b>	<b>\$107,579</b>
<b>Economic Impact Per \$ of State Support (A/B)</b>	<b>\$12.73</b>

\*These figures are indicated in thousands. Source: See Appendix D

### Long Island

With combined total expenditures of 3.8 billion dollars in FY 2004, the five SUNY campuses located in Nassau and Suffolk counties (Stony Brook University, College at Old Westbury, Farmingdale State College, Nassau Community College, and Suffolk County Community College) provide key economic development resources for Long Island. These colleges had capital construction budgets of nearly 40 million dollars and attracted millions of dollars in research funds in the areas of wireless internet and information technology, biotechnology, engineering, cyber security, biodefense, small business development, public safety, medicine, workforce development, and other areas. They enrolled 74,029 students, created more than 29,852 employment positions, and granted more than 12,587 degrees.

<b>SUNY's Economic Impact on the Long Island</b>	
<b>Campus</b>	5
<b>Enrollment</b>	74,029
<b>Employees (direct &amp; indirect)</b>	29,852
<b>Alumni</b>	349,225
<b>Degree Since Inception</b>	412,911
<b>(A) Economic Impact (direct &amp; indirect)*</b>	<b>\$3,839,537</b>
<b>All Funds (Institutions &amp; Employees)*</b>	\$1,701
<b>Capital Construction*</b>	\$39,543
<b>Student (including visitor)*</b>	\$1,074,035
<b>(B) Total State Support *</b>	<b>\$348,402</b>
<b>Economic Impact Per \$ of State Support (A/B)</b>	<b>\$11.02</b>

\*These figures are indicated in thousands. Source: See Appendix D

#### Mohawk Valley

The combined budgets of the six Mohawk Valley colleges accounted for a total of more than 500 million dollars of economic activity for this region. These colleges (SUNY Cobleskill, Morrisville State College, SUNY IT, Fulton-Montgomery Community College) had a combined enrollment of 20,066 students and 4,239 employees on campuses that granted more than 3,550 degrees in FY 2004. These SUNY colleges are attracting significant research funds in the areas of computers and information science, online learning, semiconductor manufacturing, technology, cyber security, information assurance, biotechnology, homeland defense, public safety, workforce development, and other areas.

<b>SUNY's Economic Impact on the Mohawk Valley</b>	
<b>Campus</b>	6
<b>Enrollment</b>	20,066
<b>Employees (direct &amp; indirect)</b>	4,239
<b>Alumni</b>	128,777
<b>Degree Since Inception</b>	152,261
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<b>(A) Economic Impact (direct &amp; indirect)*</b>	<b>\$505,908</b>
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<b>All Funds (Institutions &amp; Employees)*</b>	\$235,621
<b>Capital Construction*</b>	\$7,324
<b>Student (including visitor)*</b>	\$134,601
<b>(B) Total State Support *</b>	<b>\$69,449</b>
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<b>Economic Impact Per \$ of State Support (A/B)</b>	<b>\$7.28</b>

\*These figures are indicated in thousands. Source: See Appendix D

#### North Country

The six SUNY colleges located within the seven-county North Country region provide key economic development resources for the area. The colleges (SUNY Plattsburgh, SUNY Potsdam, SUNY Canton, and Clinton, Jefferson and North Country Community Colleges) had combined total expenditures of nearly 550 million dollars in FY 2004, capital construction budgets of approximately 8 million dollars, and attracted millions of dollars in research funds in the areas of teacher education, tourism, environmental studies, computer science, small business development, public safety, and other areas. They enrolled 20,345 students, created more than 5,500 employment positions, and granted more than 4,364 degrees in FY 2004.

<b>SUNY's Economic Impact on the North Country</b>	
<b>Campus</b>	6
<b>Enrollment</b>	20,345
<b>Employees (direct &amp; indirect)</b>	5,685
<b>Alumni</b>	131,196
<b>Degree Since Inception</b>	155,121
<b>(A) Economic Impact (direct &amp; indirect)*</b>	<b>\$548,964</b>
<b>All Funds (Institutions &amp; Employees)*</b>	\$264,334
<b>Capital Construction*</b>	\$7,908
<b>Student (including visitor)*</b>	\$141,644
<b>(B) Total State Support *</b>	\$55,352
<b>Economic Impact Per \$ of State Support (A/B)</b>	<b>\$9.92</b>

\*These figures are indicated in thousands. Source: See Appendix D

#### New York City

The five SUNY colleges located in the five boroughs provide key economic development resources for New York City. The colleges (Downstate Medical Center, Maritime College, State College of Optometry, Levin Institute, and Fashion Institute of Technology) had combined expenditures of 1.5 billion dollars in FY 2004, capital construction budgets of 14 million dollars, and attracted millions of dollars of research funds in the areas of biotechnology, engineering, port security, small business development, public safety, medicine, and other areas. They enrolled over 13,000 students, created more than 9,944 employment positions, and granted more than 3,120 degrees in FY 2004.

<b>SUNY's Economic Impact on the New York City</b>	
<b>Campus</b>	5
<b>Enrollment</b>	13,534
<b>Employees (direct &amp; indirect)</b>	9,944
<b>Alumni</b>	82,631
<b>Degree Since Inception</b>	97,679
<hr/>	
<b>(A) Economic Impact (direct &amp; indirect)*</b>	<b>\$1,562,578</b>
<hr/>	
<b>All Funds (Institutions &amp; Employees)*</b>	\$782,008
<b>Capital Construction*</b>	\$14,298
<b>Student (including visitor)*</b>	\$133,888
<b>(B) Total State Support *</b>	\$144,281
<hr/>	
<b>Economic Impact Per \$ of State Support (A/B)</b>	<b>\$10.83</b>
<hr/>	

\*These figures are indicated in thousands. Source: See Appendix D

#### Southern Tier

With unique strengths in high-tech science and engineering, the seven SUNY campuses in the Southern Tier provide key economic development resources for this region. The combined budgets of the campuses (Binghamton University, College at Oneonta, SUNY Delhi, NYS Colleges at Cornell (Agricultural and Life Science, Veterinary Medicine, Industrial Labor Relations, and Human Ecology), Broome Community College, Corning Community College, and Tompkins-Cortland Community College) accounted for a total of more than 2 billion dollars of economic activity for the region. These colleges had a combined enrollment of over 45,000 students and 17,894 employees across campuses that granted 9,788 degrees in FY 2004. These SUNY colleges had capital construction budgets of 33 million dollars, and they are attracting millions of dollars in research funds in the areas of integrated electronics, engineering, bioengineering, cyber security, social sciences, education, workforce development, small business assistance and other areas.

<b>SUNY's Economic Impact on the Southern Tier</b>	
<b>Campus</b>	7
<b>Enrollment</b>	45,087
<b>Employees (direct &amp; indirect)</b>	17,894
<b>Alumni</b>	302,396
<b>Degree Since Inception</b>	357,542
<b>(A) Economic Impact (direct &amp; indirect)*</b>	<b>\$2,064,852</b>
<b>All Funds (Institutions &amp; Employees)*</b>	\$1,162,947
<b>Capital Construction*</b>	\$33,155
<b>Student (including visitor)*</b>	\$444,682
<b>(B) Total State Support *</b>	<b>\$285,801</b>
<b>Economic Impact Per \$ of State Support (A/B)</b>	<b>\$7.22</b>

\*These figures are indicated in thousands. Source: See Appendix D

#### Western New York

With combined total expenditures of over 3 billion dollars in FY 2004, the eight SUNY institutions located within the five-county Western New York region (University at Buffalo, NYS College of Ceramics at Alfred University, Buffalo State College, SUNY Fredonia, Alfred State College, and Erie, Jamestown, and Niagara County Community Colleges) provide key economic development resources for the area. The colleges had capital construction budgets of 34 million dollars, and attracted millions of dollars in research funds in the areas of biotechnology, engineering, cyber security, biodefense, small business development, public safety, medicine, and other areas. They enrolled nearly 70,000 students, employed nearly 25,000 people across the campuses, and granted more than 15,000 degrees in FY 2004.

<b>SUNY's Economic Impact on the Western New York</b>	
<b>Campus</b>	8
<b>Enrollment</b>	69,441
<b>Employees (direct &amp; indirect)</b>	24,986
<b>Alumni</b>	452,808
<b>Degree Since Inception</b>	535,384
<b>(A) Economic Impact (direct &amp; indirect)*</b>	<b>\$3,049,643</b>
<b>All Funds (Institutions &amp; Employees)*</b>	\$1,333,132
<b>Capital Construction*</b>	\$34,039
<b>Student (including visitor)*</b>	\$416,872
<b>(B) Total State Support *</b>	\$367,409
<b>Economic Impact Per \$ of State Support (A/B)</b>	<b>\$8.30</b>

\*These figures are indicated in thousands. Source: See Appendix D

## 5. Conclusion

The characteristics of the region are as important as the characteristics of the higher education institutions. For that reason, the economic impact studies of higher education institutions have important differences that are dependent on the geographical conditions and population, according to which, for example, the figures of the multiplier effects vary. Consequently, the regional difference in the per-dollar economic impact of state support ranges from \$12.73 in the Hudson Valley to \$7.22 in the Southern Tier. Although higher education institutions cannot defy the forces of the market, locally established industries with mature products and rigid structures are probably less receptive than universities and colleges. Even if the local industries are receptive, they may lack the ability to train people for gaining knowledge and technology that are produced by higher education institutions.

The economic value of higher education institutions is important in both private and public spheres. People today tend to focus on the private economic benefits gained after going to college, i.e., higher salaries and better jobs. Speaking of the public economic impacts, on the other hand, higher education institutions can produce billion-dollar impacts by themselves, in addition to laying the groundwork for new firms and industries by producing skilled workers. Thus, the role of regions is to offer a base that can support such reciprocal development. This division of roles in regional development certainly requires sophisticated ways of measuring (or estimating) the economic impact of both local industries and higher education institutions. It

is vital to conducting efficient public administrations, as an important example. While it is irrefutable that the impact of higher education institutions exceeds that of their direct expenditure, the size of these indirect (spillover) benefits is more difficult to determine – especially when considering cross-state economic transactions as well as the mobility of people whose college-trained professional skills and knowledge cause different economic effects in the sending states and receiving states. These points are crucial, particularly for public higher education institutions where the infrastructure for education and training is developed more or less through state support, and the loss of graduates may be considered as a loss on this investment. At the regional level, furthermore, the case of community colleges is more cumbersome because their operations usually have multiple financial sources; therefore, a follow-up question may be raised: Which investments in higher education institutions have economic impact? And, how much? Therefore, further development of economic impact studies of higher education institutions is as important as the economic impact per se.

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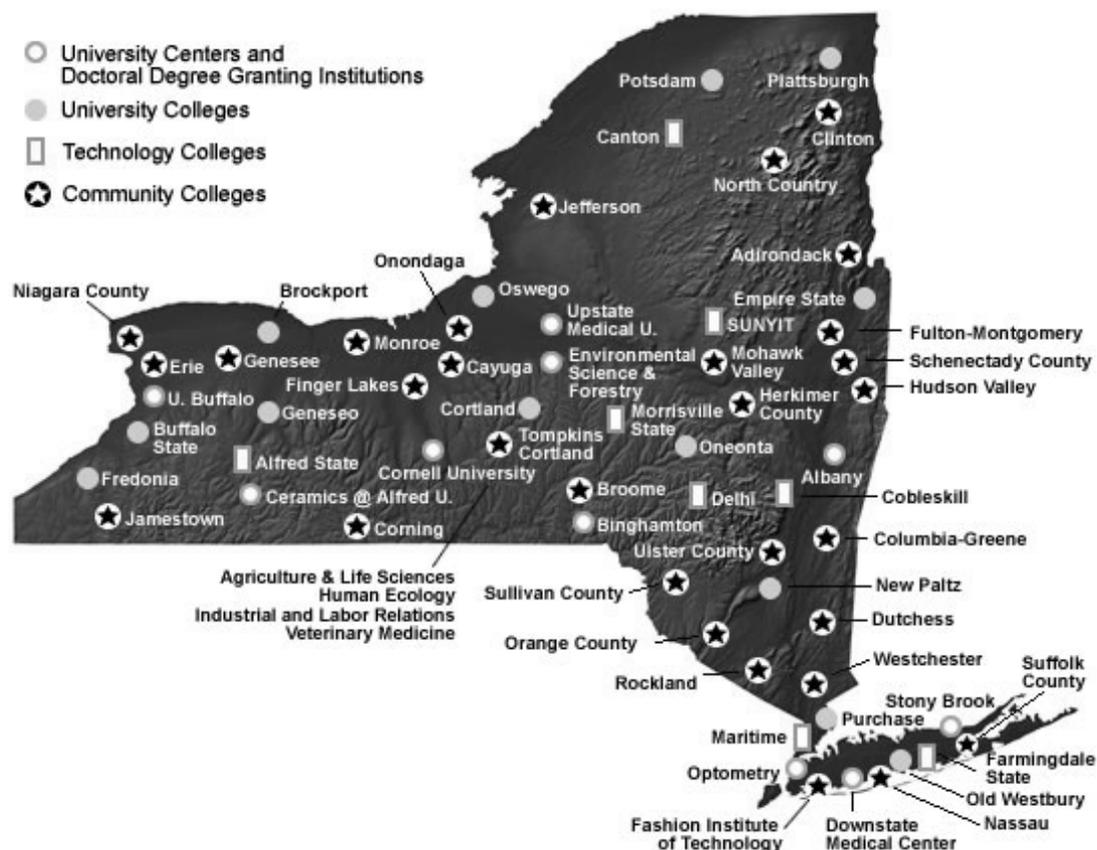
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## APPENDIX A

### *The Geographical Distribution of 64 SUNY Campuses by Type of Institutions*

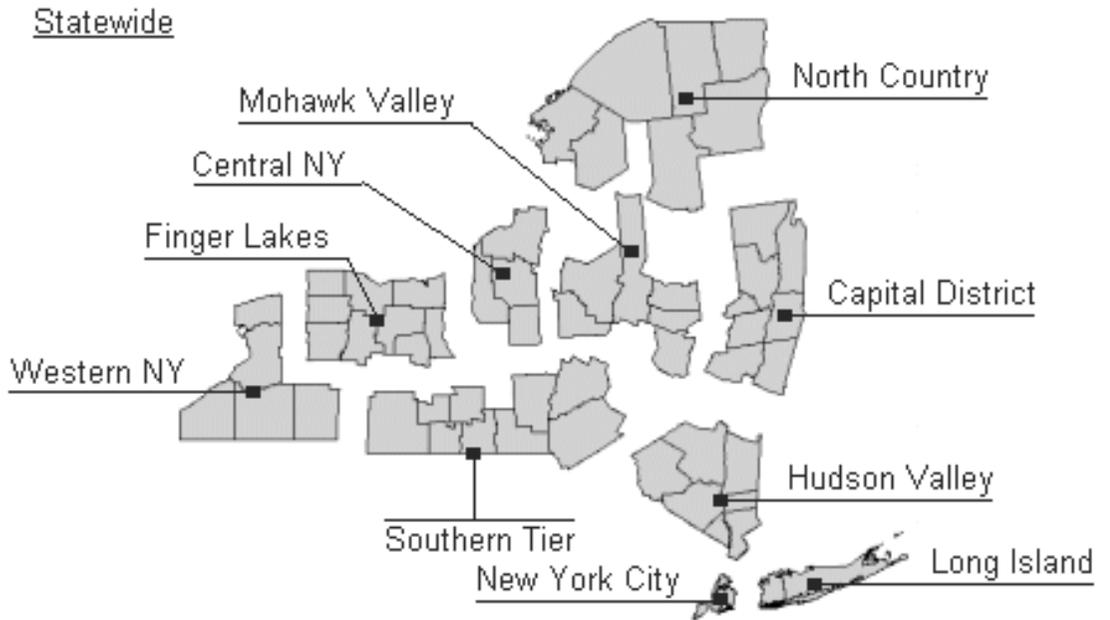


<b>University Centers and Doctoral Degree Granting Institutions (14 institutions)</b>	<b>University Colleges (12 institutions)</b>	<b>Technology Colleges (8 institutions)</b>	<b>Community Colleges (30 institutions)</b>
Albany, NYS College of Ceramics at Alfred University, Binghamton, Buffalo, NYS Colleges at Cornell (Agriculture & Life Sciences, Human Ecology, Veterinary Medicine, Industrial & Labor Relations), Health Science Center at Brooklyn, Health Science Center at Syracuse, College of Optometry, Stony Brook, Upstate Medical University	Brockport, Buffalo State, Empire State, Fredonia, Geneseo, New Paltz, Old Westbury, Oneonta, Oswego, Plattsburgh, Potsdam, Purchase,	Alfred State, Canton, Cobleskill, Delhi, Farmingdale State, Maritime, Morrisville State, SUNY IT	Adirondack, Broome, Cayuga, Clinton, Columbia-Green, Corning, Dutchess, Erie, Fashion Institute of Technology, Finger Lakes, Fulton-Montgomery, Genesee, Herkimer County, Hudson Valley, Jamestown, Jefferson, Mohawk Valley, Monroe, Nassau, Niagara County, North County, Onondaga, Orange County, Rockland, Schenectady County, Suffolk County, Sullivan County, Tompkins Cortland, Ulster Country, Westchester

Source: The State University of New York: Complete Campus List:  
[http://www.suny.edu/Student/campuses\\_complete\\_list.cfm](http://www.suny.edu/Student/campuses_complete_list.cfm)

APPENDIX B

*The New York State Economic Development Regions*



<b>Region</b>	<b>Counties Included</b>
<b><u>Statewide</u></b>	All
<b><u>Capital District</u></b>	Albany, Columbia, Greene, Rensselaer, Saratoga, Schenectady, Warren and Washington
<b><u>Central New York</u></b>	Cayuga, Cortland, Onondaga and Oswego
<b><u>Finger Lakes</u></b>	Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne, Wyoming and Yates
<b><u>Hudson Valley</u></b>	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester
<b><u>Long Island</u></b>	Nassau and Suffolk
<b><u>Mohawk Valley</u></b>	Fulton, Herkimer, Madison, Montgomery, Oneida and Schoharie
<b><u>New York City</u></b>	Bronx, Kings, New York, Queens and Richmond
<b><u>North Country</u></b>	Clinton, Essex, Franklin, Hamilton, Jefferson, Lewis and St. Lawrence
<b><u>Southern Tier</u></b>	Broome, Chemung, Chenango, Delaware, Otsego, Schuyler, Steuben, Tioga and Tompkins
<b><u>Western New York</u></b>	Allegany, Cattaraugus, Chautauqua, Erie and Niagara

Source: New York State Department of Labor: Workforce New York:

<http://www.labor.state.ny.us/workforceindustrydata/apps.asp?reg=nys&app=atoz>

## APPENDIX C

### Multipliers

(Source: Micro IMPLAN User's Guide (1993. 1))

## Overview

Multiplier analysis is used to estimate the regional economic impacts resulting from a change in final demand. Impacts can be in terms of direct and indirect effects ("Type I" multipliers), or in terms of direct, indirect, and induced effects ("Type II" and "Type III" multipliers), where:

- Direct Effects are production changes associated with the immediate effects of final demand changes.
- Indirect Effects are production changes in backward-linked industries caused by the changing input needs of directly affected industries (for example, additional purchases to produce additional output.)
- Induced Effects are the changes in regional household spending patterns caused by changes in household income (generated from the direct and indirect effects).

For example, an increase in the demand for "widgets" would cause the manufacturer to produce more output (Direct Effect). In turn, the manufacturer would demand more production inputs, causing an increase in production from all industries which supply these inputs (Indirect Effect). Finally, the increase in final demand would cause income and employment to increase, stimulating spending in the economy in general (Induced Effect). This, of course, also works in the reverse, allowing the analyst to model the impacts of reductions in final demand.

## Type of Multipliers

Micro IMPLAN generates two types of multipliers, "Type I" and "Type II". It is possible to estimate "Type II" multipliers, but Micro IMPLAN does not provide them as they generally overestimate the impacts of a change in final demand. The difference between the three types of multipliers, and how they are calculated, is described below.

Leontief Inverse: Derivation of the multipliers is done by calculating the  $(I-A)$  inverse, where  $I$  = the identity matrix, and  $A$  is the transactions matrix. The result is a matrix of “total requirements coefficients,” or the amount required by each industry to deliver one dollar’s worth of output to final demand. The Leontief Inverse calculated in Micro IMPLAN is an “Open Model,” that is, household consumption is included as a component of final demand rather than as an industry. This means that the induced effects are not explicit within the model and must be calculated by some method other than the inversion technique.

Type I Multiplier: The Leontief Inverse is a matrix of Type I multipliers – the direct effect (produced by a change in final demand) plus the indirect effect divided by the direct effect. Increased demands are assumed to lead to increased employment and population, with the average income level remaining constant.

Type II Multiplier: The sum of the direct, indirect, and induced effects divided by the direct effect yields Type II multipliers. This is done for a “Closed Model” – households are brought into the transactions matrix as an industry, and the resulting matrix is inverted in the same manner as the Open Model. The total requirements coefficients for the Closed Model, therefore, include induced effects in addition to direct and indirect effects. Since households are defined as a production sector, the relationship between changes in final demand and household expenditures is linear, in the same way as industrial production functions are linear. The assumption is that an increase household spending proportionately.

Population is assumed stable. Thus, if household income doubles, all household purchases (“inputs” to the household sector) will also double. Since this multiplier tends to overestimate economic impacts, Micro IMPLAN does not calculate it.

Type III Multiplier: The Micro IMPLAN Type III multiplier is a modification of the Type III multiplier developed by Miernyk (1965). The IMPLAN Type III compares direct, indirect, and induced effects to the direct effects generated by a change in final demand (direct + indirect + induced, all divided by direct). The Type III (Open Model) induced effects are quite different from the induced effects of a Type II multiplier. To minimize the overestimation that occurs with a linear consumption function, IMPLAN first converts direct and indirect effects to changes in employment based on each sector’s employment-to-output ratio. Employment change is then multiplied by the region’s population-to-employment ratio, converting it into population change.

Population change is multiplied by average regional per-capita consumption rates by sector to estimate the regional household consumption generated by the initial final demand changes. This change in household consumption is treated as an additional set of final demand changes and these are multiplied by the Leontief Inverse matrix to generate the first round of induced (additional direct and indirect) effects. In order to capture successive rounds of induced effects, the procedure is repeated until the population changes by fewer than 10 people. Often, induced effects are larger than indirect effects.

## Measures of Economic Impact

Micro IMPLAN calculates Type I and Type III multipliers for the following impact measures: Industry Output, Personal Income, Total Income, Value Added, and Employment.

They are defined as follows:

Output Multipliers: A Type I output multiplier represents the value of production (from indirect and direct effects) required from all sectors by a particular sector to deliver one dollar's worth of output. Type III adds in the induced requirements. Note that the size of the multiplier is not a measure of the amount of activity or the importance of a given industry for the economy, rather it is an estimation of what would happen if that industry's sales to final demand increased or decreased. In this way, output multipliers can be used to gauge the interdependence of sectors; the larger the output multiplier, the greater the interdependence of the sector on the rest of the regional economy.

Example: If a Type I multiplier for the dairy farm industry is 1.0943, for each dollar of output produced by the dairy farm sector, 0.0934 dollars worth of indirect output is generated in other local industries. If the Type III dairy farm multiplier is 1.3140, 0.3140 dollars of indirect and induced output is generated in other local industries. The induced output would be  $1.3140 - 1.09043$  or 0.2197 dollars for each dollar of output produced by the dairy farm sector.

Personal Income Multipliers: A Type I personal income multiplier is the direct and indirect employee compensation divided by the direct employee compensation (generated by one dollar

of final output). The Type III multiplier adds in the induced effects component.

Example: If the Type I multiplier for the dairy farm industry is 1.4761 and Type III multiplier is 2.7067, then for each dollar of direct employee compensation generated by this industry, 0.4761 dollars of indirect employment compensation, and 1.2306 dollars of induced employee compensation is generated.

Total Income Multiplier: These Type I and Type III multipliers calculate the direct and indirect, and induced effects on total income (employee compensation, proprietary income, and other property income) generated from the production of one dollar's worth of final demand. They are calculated as described above.

Value Added Multiplier: These Type I and Type III multipliers estimate the direct, indirect, and induced effects on Value Added generated from the production of one dollar of output. Value Added includes employee compensation, proprietary income, other property type income, and indirect business taxes. They are calculated as described above.

Employment Multiplier: These Type I and Type III multipliers estimate the direct, indirect, and induced effects on employment from the production of one dollar of output. Employment is in terms of the number of jobs for the 1982 (and earlier) database, and in terms of full time equivalents (FTE's) in the 1985 database. They are calculated as described above.

Example: If a dairy farm Type I employment multiplier is 1.1158, for each job created directly by the dairy farm industry, 0.1158 jobs are created indirectly.

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## APPENDIX D

### The Summary of State University of New York Selected Economic Impact Measures by Regions in FY 2004\*

Campus	Region	Fall 2005 Total Enrollment	2004-05 Degrees/Certs Awarded	Degrees Since Inception	SUNY Alumni	2004-05 All Funds Expenditures (\$ thousands)	2004-05 Capital Construction (\$ thousands)	2004-05 Student (and visitor) Expenditure	2004 direct Economic Impact (\$)	2004 Indirect Economic Impact (\$)	2004 Economic Impact (\$)	Economic Impact Per Dollar of State Support	Total State Support	Total Direct and Indirect Employment
Adirondack	Capital	3,493	493	15,911	13,457	22,711	24	23,064,516	22,711,000	45,083,813	67,794,813	12.10	5,601,860	697
Albany	Capital	17,040	4,427	149,276	126,232	476,218	15,794	261,260,244	476,218,400	526,202,888	1,002,421,288	11.47	87,399,323	7,444
Columbia-Greene	Capital	1,728	312	7,588	6,418	16,815	68	14,925,455	16,815,000	29,226,592	46,041,592	15.60	2,950,800	418
Empire State	Capital	9,996	2,754	48,024	40,617	70,886	(59)	66,682,267	70,885,900	130,214,375	201,100,275	14.72	13,659,688	2,134
Hudson Valley	Capital	12,143	1,655	59,863	50,630	87,512	540	78,531,512	87,512,000	153,962,337	241,474,337	12.32	19,595,800	1,878
Schenectady	Capital	4,755	486	12,579	10,639	23,280	49	29,840,702	23,280,000	58,347,370	81,627,370	12.58	6,487,740	775
System Admin	Capital	-	-	-	-	163,877	25,835	-	163,877,300	70,370,826	234,248,126	13.23	17,710,739	1,032
U-Wide Programs	Capital	-	-	-	-	64,612	2,162	-	64,612,400	25,148,507	89,760,907	4.49	19,974,037	813
<b>Total Capital Region</b>		<b>49,155</b>	<b>10,127</b>	<b>293,241</b>	<b>248,012</b>	<b>925,912</b>	<b>44,413</b>	<b>474,304,696</b>	<b>925,912,000</b>	<b>1,038,556,708</b>	<b>1,964,468,708</b>	<b>11.33</b>	<b>173,379,987</b>	<b>15,191</b>
Cayuga	Central	3,842	593	20,002	16,917	42,910	145	25,598,084	42,910,000	50,154,592	93,064,592	14.71	6,327,755	752
Cortland	Central	7,224	1,820	63,566	53,762	100,022	1,842	68,531,815	100,021,700	135,728,340	235,730,040	11.71	20,129,655	2,550
ESF	Central	2,140	388	20,080	16,983	59,492	1,879	-	59,492,100	64,319,644	123,811,744	4.57	27,111,071	1,235
Onondaga	Central	8,263	859	32,530	27,513	68,179	167	68,301,182	68,179,000	133,603,127	201,782,127	14.20	14,211,780	1,655
Oswego	Central	8,282	1,761	73,672	63,309	120,084	4,682	83,127,658	120,084,200	167,083,982	287,168,182	11.71	24,523,003	2,201
Upstate-HSC	Central	1,235	303	12,237	10,350	57,387	14,945	-	57,386,800	560,917,086	1,134,703,886	14.38	78,886,704	11,162
<b>Total Central</b>		<b>30,986</b>	<b>5,724</b>	<b>222,087</b>	<b>187,833</b>	<b>964,474</b>	<b>24,094</b>	<b>245,558,739</b>	<b>964,473,800</b>	<b>1,111,806,771</b>	<b>2,076,280,571</b>	<b>12.13</b>	<b>171,189,968</b>	<b>19,555</b>
Brockport	Finger	8,484	2,330	75,576	63,919	119,887	259	79,766,943	119,886,500	156,095,372	275,981,872	9.02	30,611,913	3,599
Finger Lakes	Finger	4,910	746	19,288	16,313	32,186	25	35,221,192	32,186,000	68,834,753	101,020,753	12.93	7,810,980	901
Genesee	Finger	6,490	714	17,746	15,009	34,271	-	38,313,956	34,271,000	74,851,715	109,122,715	12.39	8,805,626	1,057
Genesee	Finger	5,484	1,364	52,042	44,015	85,602	9,774	58,689,524	85,600,500	124,432,489	210,033,989	11.65	18,031,247	1,946
Monroe	Finger	17,294	2,781	70,749	59,837	120,463	52	128,323,535	120,463,000	250,749,697	371,212,697	12.00	30,924,600	3,500
<b>Total Finger Lakes</b>		<b>42,662</b>	<b>7,935</b>	<b>235,401</b>	<b>199,093</b>	<b>392,408</b>	<b>10,110</b>	<b>340,315,151</b>	<b>392,408,000</b>	<b>674,964,026</b>	<b>1,067,372,026</b>	<b>11.10</b>	<b>96,184,366</b>	<b>11,003</b>

Dutchess	Hudson	8,020	877	31,270	26,447	44,649	120	63,241,774	44,649,000	123,672,121	168,321,121	12.97	12,973,050	1,105
New Paltz	Hudson	7,822	2,004	67,552	57,133	115,885	14,928	74,747,843	115,884,700	160,958,088	276,842,788	11.58	23,899,077	2,707
Orange	Hudson	6,441	716	27,113	22,931	41,424	9	55,641,097	41,424,000	104,804,649	146,228,649	14.98	9,758,580	1,271
Purchase	Hudson	3,811	835	14,616	12,362	98,624	7,536	50,403,321	98,624,100	106,005,951	204,630,051	9.95	20,563,464	1,489
Rockland	Hudson	6,325	830	33,324	28,184	48,071	-	55,150,180	48,071,000	107,743,653	155,814,653	14.03	11,102,300	1,714
Sullivan	Hudson	1,684	211	10,782	9,119	19,671	74	14,969,609	19,671,000	29,319,730	48,990,730	15.68	3,124,860	350
Ulster	Hudson	3,199	369	16,546	13,994	24,337	31	24,890,330	24,337,000	48,657,918	72,994,918	14.63	4,989,300	606
Westchester	Hudson	11,564	1,192	38,251	32,351	89,813	690	104,805,948	89,813,000	205,443,064	295,256,064	13.95	21,168,654	1,848
<b>Total Hudson Valley</b>		<b>48,866</b>	<b>7,034</b>	<b>239,454</b>	<b>203,521</b>	<b>482,474</b>	<b>24,995</b>	<b>441,028,148</b>	<b>482,473,800</b>	<b>886,605,174</b>	<b>1,369,078,974</b>	<b>12.73</b>	<b>107,579,285</b>	<b>11,090</b>
Farmingdale	LI	6,461	1,007	69,297	58,609	69,665	2,703	50,468,149	69,665,200	101,299,651	170,964,851	8.05	21,245,606	1,447
Nassau	LI	20,979	2,897	111,669	94,446	176,902	1,000	173,463,520	176,902,000	339,885,444	516,787,444	12.92	40,006,131	3,991
Old Westbury	LI	3,398	654	17,551	14,844	54,416	7,004	31,637,326	54,416,000	68,812,209	123,228,209	9.28	13,281,494	867
Stony Brook	LI	22,011	5,481	131,507	111,224	1,254,993	28,724	644,166,964	1,254,993,300	1,291,102,472	2,546,095,772	10.70	237,902,893	19,252
Suffolk	LI	21,180	2,548	82,887	70,103	145,738	112	172,299,737	145,738,000	336,723,533	482,461,533	13.41	35,966,050	4,295
<b>Total Long Island</b>		<b>74,029</b>	<b>12,587</b>	<b>412,911</b>	<b>349,225</b>	<b>1,701,715</b>	<b>39,543</b>	<b>1,074,035,695</b>	<b>1,701,714,500</b>	<b>2,137,823,309</b>	<b>3,839,537,809</b>	<b>11.02</b>	<b>346,402,174</b>	<b>29,852</b>
Cobleskill	Mohawk	2,478	531	31,259	26,438	44,861	2,421	21,264,559	44,860,500	43,964,296	88,824,796	8.74	10,158,713	717
Fulton-	Mohawk	2,203	371	12,364	10,457	17,431	310	12,578,333	17,431,000	24,883,061	42,314,061	11.03	3,835,680	340
Montgomery	Mohawk	3,549	562	16,302	13,788	25,801	264	24,126,603	25,801,000	47,398,838	73,199,838	3.74	19,595,800	602
Herkimer	Mohawk	5,984	855	40,857	34,555	45,565	119	33,193,610	45,565,000	64,966,924	110,531,924	10.81	10,226,923	1,039
Mohawk Valley	Mohawk	3,262	637	30,683	25,951	57,611	3,251	29,496,149	57,611,100	60,876,062	118,487,162	8.45	14,014,085	924
Morrisville	Mohawk	2,590	594	20,796	17,588	44,352	960	13,942,473	44,352,000	28,198,477	72,550,477	6.24	11,617,811	617
Utica-Rome	Mohawk	20,066	3,550	152,261	128,777	235,621	7,324	134,601,728	235,620,600	270,287,658	505,908,258	7.28	69,449,012	4,239
Canton	North	2,481	643	26,215	22,172	36,137	679	17,149,460	36,136,600	34,182,406	70,319,006	8.33	8,440,485	737
Clinton	North	2,301	358	7,945	6,720	14,253	118	13,158,517	14,253,000	25,824,800	40,077,800	11.58	3,460,900	391
Jefferson	North	3,585	565	15,851	13,406	23,791	52	20,156,200	23,791,000	39,390,421	63,181,421	11.56	5,463,620	578
North Country	North	1,605	283	8,499	7,188	12,878	312	9,057,301	12,878,000	18,007,078	30,885,078	12.04	2,565,805	252
Plattsburgh	North	6,044	1,399	55,203	46,689	95,001	3,209	44,878,385	95,001,100	90,885,302	185,886,402	10.76	17,283,542	1,686
Potsdam	North	4,329	1,116	41,408	35,021	82,274	3,539	37,264,730	82,274,000	76,341,115	158,615,115	8.74	18,138,470	2,041
<b>Total North Country</b>		<b>20,345</b>	<b>4,364</b>	<b>155,121</b>	<b>131,196</b>	<b>264,334</b>	<b>7,908</b>	<b>141,644,593</b>	<b>264,333,700</b>	<b>284,631,122</b>	<b>548,964,822</b>	<b>9.92</b>	<b>55,352,822</b>	<b>5,685</b>

Downstate- HSC	1,567	505	17,903	15,142	579,174	11,617	-	579,174,000	516,322,045	1,095,496,045	11.08	98,851,280	6,615
Fashion Institute	10,381	2,368	69,554	58,826	124,476	-	111,002,734	124,476,000	216,859,493	341,335,493	17.28	19,757,840	2,347
Levin	-	-	-	-	7,847	-	(4,008,805)	7,847,000	(7,831,766)	15,234	-	-	33
Maritime	1,294	179	8,307	7,026	34,531	1,427	14,727,975	34,530,500	30,199,960	64,730,460	5.71	11,342,744	374
Optometry	292	68	1,915	1,620	35,980	1,254	12,165,727	35,980,400	25,021,116	61,001,516	4.26	14,329,794	575
<b>Total NYC</b>	<b>13,534</b>	<b>3,120</b>	<b>97,679</b>	<b>82,613</b>	<b>782,008</b>	<b>14,298</b>	<b>133,887,631</b>	<b>782,007,900</b>	<b>780,570,848</b>	<b>1,562,578,748</b>	<b>10.83</b>	<b>144,281,658</b>	<b>9,944</b>
Binghamton	14,018	3,517	93,159	78,790	283,891	7,555	133,443,009	283,890,800	268,254,822	552,145,622	7.68	71,868,974	5,591
Broome	6,230	1,045	40,195	33,995	49,197	60	42,058,654	49,197,000	82,227,071	131,424,071	11.65	11,279,410	1,105
Cornell	7,939	2,107	97,782	82,700	623,905	22,542	221,729,999	623,904,900	455,722,685	1,081,627,585	6.13	176,428,223	7,949
Statuories	5,310	692	25,397	21,480	35,809	113	31,710,510	35,809,000	62,064,301	97,873,301	13.40	7,305,434	825
Oneonta	5,859	1,289	55,712	47,119	99,365	846	51,990,300	99,365,400	102,416,727	201,782,127	10.67	18,919,061	2,424
Delhi	2,557	631	32,190	27,225	40,043	1,606	25,205,837	40,042,800	50,848,959	90,891,759	9.69	9,380,503	683
Tompkins- Cortland	3,174	507	13,107	11,085	28,737	433	28,176,281	28,737,000	55,479,689	84,216,689	13.02	6,468,395	793
<b>Total Southern Tier</b>	<b>45,087</b>	<b>9,788</b>	<b>357,542</b>	<b>302,396</b>	<b>1,162,947</b>	<b>33,155</b>	<b>444,682,744</b>	<b>1,094,167,100</b>	<b>970,685,606</b>	<b>2,064,852,706</b>	<b>7.22</b>	<b>285,801,102</b>	<b>17,894</b>
Alfred	737	177	8,033	6,794	22,704	1,469	17,854,855	22,703,800	36,351,286	59,055,086	6.06	9,749,760	277
Cenantes	3,304	917	47,860	40,478	57,074	2,117	40,311,846	57,074,100	80,871,752	137,945,852	10.61	13,006,282	1,157
Buffalo Center	27,220	6,863	208,783	176,581	825,293	18,496	-	825,293,300	886,549,490	1,711,842,790	7.03	243,656,713	12,943
Buffalo State	11,006	2,288	103,177	87,263	163,197	5,309	116,472,260	163,196,700	232,854,003	396,030,703	10.27	38,567,637	3,434
Eric	12,657	1,924	68,690	58,095	101,671	-	96,940,799	101,671,000	189,387,520	291,058,520	11.70	24,881,310	3,006
Fredonia	5,432	1,289	43,399	36,705	86,873	6,090	59,544,363	86,872,900	122,418,745	209,291,645	9.99	20,951,403	1,957
Jamestown	3,663	743	24,581	20,790	32,505	58	39,188,235	32,505,000	76,617,715	109,122,715	15.40	7,084,150	942
Niagara	5,422	886	30,861	26,101	43,815	500	46,559,814	43,815,000	91,460,785	135,275,785	14.22	9,511,835	1,270
<b>Total Western NY</b>	<b>69,441</b>	<b>15,087</b>	<b>535,384</b>	<b>452,808</b>	<b>1,333,132</b>	<b>34,039</b>	<b>416,872,173</b>	<b>1,333,131,800</b>	<b>1,716,511,296</b>	<b>3,049,643,096</b>	<b>8.30</b>	<b>367,409,090</b>	<b>24,986</b>
<b>Grand Total</b>	<b>414,171</b>	<b>79,316</b>	<b>2,701,081</b>	<b>2,284,474</b>	<b>8,245,023</b>	<b>237,841</b>	<b>3,846,931,298</b>	<b>8,176,243,200</b>	<b>9,872,442,518</b>	<b>18,048,685,718</b>	<b>9.92</b>	<b>1,819,029,464</b>	<b>149,439</b>

\*Numbers are best available at the time of collection and may be approximations. Subject to revision.