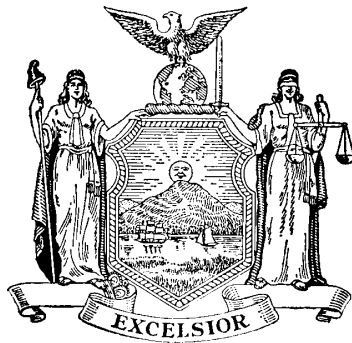


# **COLLABORATING FOR THE FUTURE**



A Report from the New York State Assembly  
**Subcommittee on the Emerging Workforce**

Marc S. Alessi,  
Chair

*Fall 2010*

Dear Friends,

Last year, as Chair of the Subcommittee on the Emerging Workforce, I initiated a series of fact-finding events across the State to identify emerging industries that present opportunities for well-paying jobs for our citizens and learn how government, industry, labor, education, and training entities are working together to meet the needs of these industries.

At each of these events, my colleagues and I heard from educators at the secondary, community college and university levels; local workforce investment boards; training providers; economic development officials; and private industry. Although regional differences clearly existed, several familiar and overlapping themes emerged. We received many good suggestions for how to improve our State's economy, and several of these ideas were turned into legislation.

I was encouraged that our objective to gather information from key providers and stakeholders was met with keen interest and participation from so many individuals and groups. All have expressed interest in keeping the communication and idea-sharing going. To that end, I am furnishing you with this report of the events and on the legislation that emerged from our discussions. I encourage you to provide input and recommendations about directions for the future.

Marc S Alessi, Chair

## **Fact-Finding Events**

As newly appointed chair of the Assembly Subcommittee on Emerging Workforce, Assemblymember Alessi immediately began to reach out across the State to hear what businesses have to say about their needs and to bring together education and training professionals to respond to those needs. During the last Legislative session, he co-chaired events across the State to identify the needs of our emerging industries, and what the State can do to encourage their growth and success.

These events included two roundtable discussions and a hearing. The first met on Long Island at the Center of Excellence at Stony Brook University, the second convened at Niagara University in Niagara Falls. Several additional Assemblymembers joined Assemblymember Alessi and his co-chairs at the hearing held in the State Capitol. Not only did the Members hear from the experts, but they saw how the State's investments, such as the supercomputers at Brookhaven and Buffalo, can make a huge difference moving ideas from lab to market.

During these discussions Assemblymember Alessi and his colleagues heard from people in government, industry, labor, research and both secondary and post-secondary education. At each of these events educators at the secondary, community college and university levels; members of local workforce investment boards; training providers; economic development officials; and individuals from private industry presented their concerns and offered suggestions on how the State could help them. Although regional differences clearly existed, several familiar and overlapping themes emerged and the Subcommittee has worked diligently to be responsive to those needs.

In different parts of the State, reflecting unique economies and outlooks, Assemblymember Alessi was struck by a common energy to work to build on the strengths of our educational institutions, workforce organizations and industry. In each region he found examples of the strong collaboration necessary for our State to thrive as well as found several common, overlapping themes.

**Role of the Research University in Emerging Workforce Education.** In each of the regions, specific programs have been and are being developed that respond to industry needs. These include partnerships among four-year and two-year colleges, degree programs that combine advanced business degrees with specific content areas such as nanotechnology, high tech trades training, and other innovative programs that engage students as young as elementary school age. Efforts also include reaching out to engage traditionally underrepresented social and ethnic groups in high tech fields.

An example of the collaborative activity between two- and four-year higher education institutions is seen in the School of Nanosciences and Nanoengineering at the University of Albany and Hudson Valley Community College. This partnership has led the way in creating an array of degree-granting opportunities in the field of nanotechnology. This particular set of programs creates an "instructional continuum from elementary education up through certificate level skills training." Likewise, Union College, Schenectady

County Community College and SuperPower, Inc. work together to help the company address its research and development issues while also provide research experience for engineering students at Union as well as specialized and targeted training at the community college. A new associate's degree program has been created at the community college as a direct result of the collaboration.

Such programs feed businesses' specific workforce demands and, in so doing, spawn new academic programs, new facilities, new equipment, all coming together to continually educate, train and enhance the quality of the workforce and, in turn, the quality of the company (and, ultimately, other companies). There needs to be an ongoing and dynamic relationship between businesses and institutions of higher education, and also among the institutions themselves, so that programs that need to be developed to meet specific industry/company needs are designed and implemented most efficiently and effectively.

**Role of the Community College in Emerging Workforce Education.** There is a community college representing every county in the State and they are often referred to as "the best economic and workforce development tool" for New York. These post-secondary education institutions, in addition to serving as springboards for students who plan to attend four-year institutions, offer essential two-year training programs that have been developed in collaboration with industry. It is not unusual for such programs to have advisory committees that include business and industry representation. Community college responsiveness to industry needs also includes the offering of non-credit industry-relevant courses.

Community colleges are seeing growing enrollment in mid-career workers (30-40 years) who are seeking new skills for new jobs. They are also being viewed as potential locations for more business incubators. Overall, they provide a good model for collaboration both among themselves and between the elements of the workforce continuum.

On Long Island, the community colleges and BOCES representatives are working towards the development of "career academies" and are engaging in other efforts to better link academic subjects and industrial careers. It has been argued that academic programs need to be clustered around industries rather than disciplines to better show how different careers can develop and how different core subjects are related to those careers. More adult education opportunities are needed in light of changes in the workforce. Attention also needs to be paid to basic skills such as interview techniques to helping new, emerging workers succeed.

**Collaboration among State and Local Agencies and Industry.** Effective collaborations that make it easy for local businesses to connect with an appropriate agency at both the local and State levels are seen as absolutely crucial to industry's ability to make its workforce needs known. As federal funds become available through different agencies, and as industry needs change and expand, there has to be a reliable information source getting the word out about funding opportunities. Currently, there is

an unproductive overlap and duplication of agencies applying for and utilizing job training funds.

Essential for stimulating a demand for workers is improving the business climate in New York and taking other steps to encourage business growth. Participants in Western New York, including representatives of both the Center of Excellence on Bioinformatics and Life Sciences in Buffalo and Infotonics and Technology in Rochester<sup>1</sup>, maintained that it was imperative to make the commercialization of products and processes resulting from the collaboration between universities and businesses easier with more coordinated support from the State and more incubators to help grow spin-off companies. It was recommended that the State devote more resources towards commercialization than it does for research. It was also noted that while health care is obviously an important sector in many regional economies, steps need to be taken to build other elements that help drive the economy like manufacturing.

Overall, a better job needs to be done to make known the assets that the State and its regions hold for businesses in terms of educational infrastructure, trained workforce and facilities. Coordination needs to occur for all aspects of economic development including simplifying applications for business assistance and providing more synchronized assistance to business.

**Developing the Skills of Entry-Level Workers.** Basic skills, including literacy, play a crucial role in a high tech workforce. Entry-level workers present a great challenge, and in the past programs to provide assistance have not always met expectations. The complexity of the workforce system has been identified as part of the problem and an effort to make the system more easily navigable from various entry points is essential.

A real concern is the mismatch between skills needed in emerging and expanding high tech industries and the skills of the workforce of the future. This disconnect was referred to often. For example, it was pointed out that if declining literacy skills are not halted, and if the direction is not reversed, the result will continue to be unskilled and unemployed individuals unable to meet the needs of industry. Both sides, employers and potential employees, will remain underserved. Underscoring this issue is the startling statistic that nationally, according to a recent report by the National Association of Adult Literacy, 14% of all working people fall into a “Level 5” category, meaning they are essentially illiterate. It was noted that many individuals “can’t fill out a job application,” let alone fill a job. A staggering ranking is that New York State is 49<sup>th</sup> out of 50 states with 22% of working age people in Level 5. This speaks volumes to prospective employers as they look to locate their businesses here, conduct research and development here, and commercialize and manufacture products and processes here.

**Importance of Early Development of Interests and Opportunities.** It is crucial to capture the interest of students in the sciences, mathematics and technology at an early age. Federally-funded programs, such as the Summer Youth Employment Program, are a way in which students can become acquainted with workforce opportunities relatively early on in

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<sup>1</sup> Now the Smart System Technology & Commercialization Center (STC).

their education. The shortage of skilled workers for what's been referred to as "middle skill jobs" makes it imperative to capture student interest at this stage.

**Technology Requires Advanced Skills.** The nature of many jobs is changing. Entry level positions, such as those in health care, increasingly require technical knowledge. Although universities continue to research and develop new technologies, many sophisticated technologies are being rapidly deployed beyond the university setting. Developments in the health and energy sectors play a key role in defining jobs for emerging workers and the increased use of technology for all levels of jobs is redefining careers. Western New York and Long Island participants noted that robotics and personalized medicine are moving out of the university setting to community hospitals. These evolutionary changes align with a more recent shift in federal research in these sectors. The increased use of technology for all levels of jobs is redefining careers. These evolutionary changes align with a more recent shift in federal research in these sectors. New research partnerships at Stony Brook University and Brookhaven National Laboratory (BNL) will help generate new businesses and new jobs in such areas a green technology. The new BNL advanced energy center is being built as part of a partnership between IBM, GE and the federal government.

Agriculture is another important economic sector that reflects the transition to a more technological approach to careers and workforce development. On Long Island, vineyard and other agriculture jobs are being redefined to require more complex technical and scientific knowledge and more and more jobs are being professionalized. This development should be expanded, turning *jobs* into *careers*.

Communication among all of the groups represented at the roundtables and hearings as well as between those interests and the State's elected representatives must continue to be nourished and encouraged. It is crucial that the discussion continues so that the emerging workforce receives the education and training it needs and businesses continue to get the workforce they need in order to thrive.

## Legislative Initiatives

Based on the fact-finding and in consultation with these experts, the Assemblymembers wrote and introduced a package of bills to aid high tech economic development in New York State. These bills were a direct result of what was heard and seen across the State.

### Investment in Ideas

One of the most important pieces of legislation developed this year would put in place the Seed-NY Investment Fund (**A. 9406**) which would invest in regional equity funds to help finance the commercialization of new technologies and help new companies get off the ground. The proposal relied on regional expertise to complete the necessary due diligence moving the State from providing “retail” assistance to “wholesale” assistance. The governor supported the idea in his budget, but it could not be funded under these difficult fiscal conditions. An important companion to this legislation was **A.9469**. This bill would have directed funds from an unused state program to provide small grants to help entrepreneurs turn their ideas into prototypes and help with necessary first steps of commercialization. The Subcommittee looked carefully at the needs and determined that the best way was to rely again on the expertise of those at the regional level who are closer to the research and other sources of investment rather than create another program in Albany.

### Supporting What Works

Another important step that the Subcommittee felt should be taken this year was to codify those programs in law that have been endangered by budget cuts, but have proved their worth. For example, after visiting the super computers at Brookhaven, Assemblymember Alessi learned that this important program is not in law. He therefore introduced the High Performance Computing Program (**A. 9405**) bill. This proposal would put in law a program that selects and funds projects that connect researchers and businesses with New York State's high performance computing resources. Because it is essential to be sure that the taxpayers' dollars are being used wisely, this bill also adds critical accountability language to provide information that would enable the State to assess how successful the program is at its mission.

Another bill (**A. 9751**) would codify the current Strategic Partnership for Industrial Resurgence program (SPIR). This program strengthens the State's small and mid-sized businesses by helping them address engineering problems and processes to improve industrial competitiveness and provides companies with technical assistance on research projects and in the application for federal and other funding. This program has proved in worth many times over at the state university's engineering schools, such as Stony Brook, by not only helping companies solve technical problems, but providing with invaluable experience. Putting this into permanent law assures that it can continue to help companies improve their market posture, retain existing employees and create new jobs. Assemblymember Alessi also co-sponsored legislation (**A. 10009**) that would codify the

Centers of Excellence Program. The Program has been operating since 2002 and putting it in permanent statute would maintain its purposes and goals as well as enhance accountability. These bills are important statewide, but are also important here on Long Island for Stony Brook University.

### **Tax Benefits**

At a roundtable held here on Long Island, the Chairman Alessi heard from venture capitalists and others that New York's current tax law for investing in small technology companies needed some improvements to help the commercialization process. He wrote a bill (**A. 10115**) that would establish the Qualified Emerging Technology Commercialization Tax Credit. This bill would allow a commercialization tax credit for small companies engaged in high-technology fields. A credit for commercialization expenses would directly aid companies seeking to bring products to market, and fill a niche in the array of incentives available to small technology companies.

He also worked with his colleagues to improve other aspects of the tax law for small tech companies that are so important for our future. **A. 1889**, for example, would increase the existing tax credit for jobs created by small companies engaged in high-technology fields. Enhancing the refundable tax credit currently authorized for job creation could help alleviate cash flow difficulties and, thus, help companies to start up and expand in New York.

Another bill (**A. 1892**) that he co-sponsored would increase the tax credit for equity investments in small companies engaged in high-technology fields and would extend the credit to investments in venture capital funds that invest in such companies. The accelerated growth of companies in emerging technology fields is critical to ensuring future economic prosperity in New York State. The State has recently invested millions of dollars in university/industry research and development with the intent that this R&D would lead to new products being commercialized in the State and, thus, be a significant source of quality jobs. However, entrepreneurs and start-up companies that are key players in translating R&D into commercial products require large amounts of outside equity and seed capital to prove a new concept and to fuel their growth.

Testimony received over the past few years from venture firms, companies, and economic developers in emerging technology fields has identified a gap in seed funding for entrepreneurs and new companies. Seed funds account for less than two percent of all venture capital investments. The largest source of seed funds is from angel investors, wealthy individuals willing to invest in new companies and new ideas, yet there has been a recent decline in the percentage of angel investments going to seed and start-up deals. The tax credit enhancement provided by this legislation would encourage such investments and lead to the commercialization of new products by entrepreneurs and small companies.

Assemblymember Alessi has also worked with his Senate colleagues to make sure that their economic development ideas receive consideration in our House, and he is the

Assembly sponsor for legislation supporting incubator networks (**A.11616**), improving science and technology training (**A.11476**) and providing for mobile high tech training facilities (**A.11477**).

### **Success**

This was a difficult budget year. Making any change, even to codify an existing program was difficult. However, there were important accomplishments. One such success was legislation (**A. 9810**) that provided language that would allow the Centers for Advanced Technology to operate more efficiently and effectively. This legislation came about in response to concerns expressed by the Centers, including the two in Long Island at Stony Brook University. This bill was signed into law (**Chapter 191 of the laws of 2010**).

Another bill (**A.9991**) signed into law (**Chapter 440 of the laws of 2010**) that he was pleased to co-sponsor recodified the Science and Technology Law Center and established the Technology Commercialization Clinic. This entity is crucial because a major problem in commercialization of research is the lack of business and legal information and analysis necessary to guide the development of early-stage technologies and to plan the launch of start-up companies. This program directly addresses this problem by providing such assistance.

## REGIONAL OVERVIEWS

### Patterns of Population Growth

<b>Population by Region</b>		
<b>2009</b>		
New York State	19,541,453	100.0%
New York City	8,391,881	42.9%
Long Island	2,875,904	14.7%
Mid-Hudson	2,289,762	11.7%
Western New York	1,386,153	7.1%
Finger Lakes	1,193,363	6.1%
Capital Region	1,065,402	5.5%
Central New York	773,606	4.0%
Southern Tier	707,812	3.6%
Mohawk Valley	433,401	2.2%
North Country	424,169	2.2%

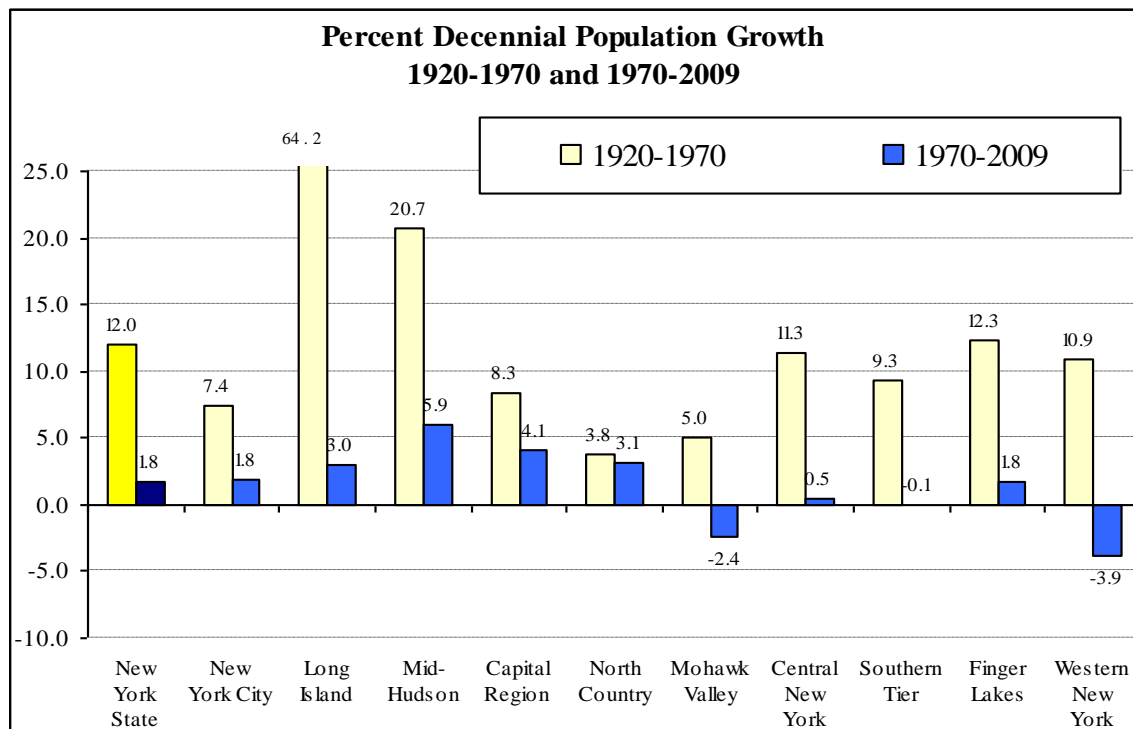
Data: U.S. Census Bureau

Over two-thirds of New York’s population is concentrated in the southeastern part of the State, an area that includes New York City, Long Island, and the Mid-Hudson regions.

<b>Population by Region</b>										
<b>New York State</b>										
<b>1920 - 2009</b>										
	1920	1930	1940	1950	1960	1970	1980	1990	2000	2009
New York State	10,385,227	12,588,066	13,479,142	14,830,192	16,782,304	18,242,584	17,558,165	17,990,455	18,976,457	19,541,453
New York City	5,620,048	6,930,446	7,454,995	7,891,957	7,781,984	7,895,563	7,071,639	7,322,564	8,008,278	8,391,881
Long Island	236,366	464,108	604,103	948,894	1,966,955	2,555,868	2,605,813	2,609,212	2,753,913	2,875,904
Mid-Hudson	720,519	945,562	1,049,947	1,157,787	1,501,234	1,818,778	1,931,293	2,025,972	2,179,189	2,289,762
Western New York	976,906	1,148,617	1,194,400	1,346,104	1,576,499	1,624,640	1,527,190	1,465,887	1,443,743	1,386,153
Finger Lakes	628,628	709,570	730,542	802,490	940,043	1,113,840	1,125,717	1,161,470	1,199,588	1,193,363
Capital Region	609,914	668,150	683,400	747,635	828,675	908,876	951,577	1,003,844	1,029,927	1,065,402
Central New York	446,891	497,501	505,157	572,408	678,836	759,929	771,685	791,140	780,716	773,606
Southern Tier	456,647	506,790	530,310	600,755	666,793	710,479	720,347	731,049	718,973	707,812
Mohawk Valley	375,923	393,001	395,902	421,685	466,198	478,654	463,516	459,943	441,638	433,401
North Country	313,385	324,321	330,386	340,477	375,087	375,957	389,388	419,374	420,492	424,169

Data: U.S. Census Bureau

New York’s population grew rapidly for most of its history until about 1970, after which it has continued to increase but very slowly.



Data: U.S. Census Bureau

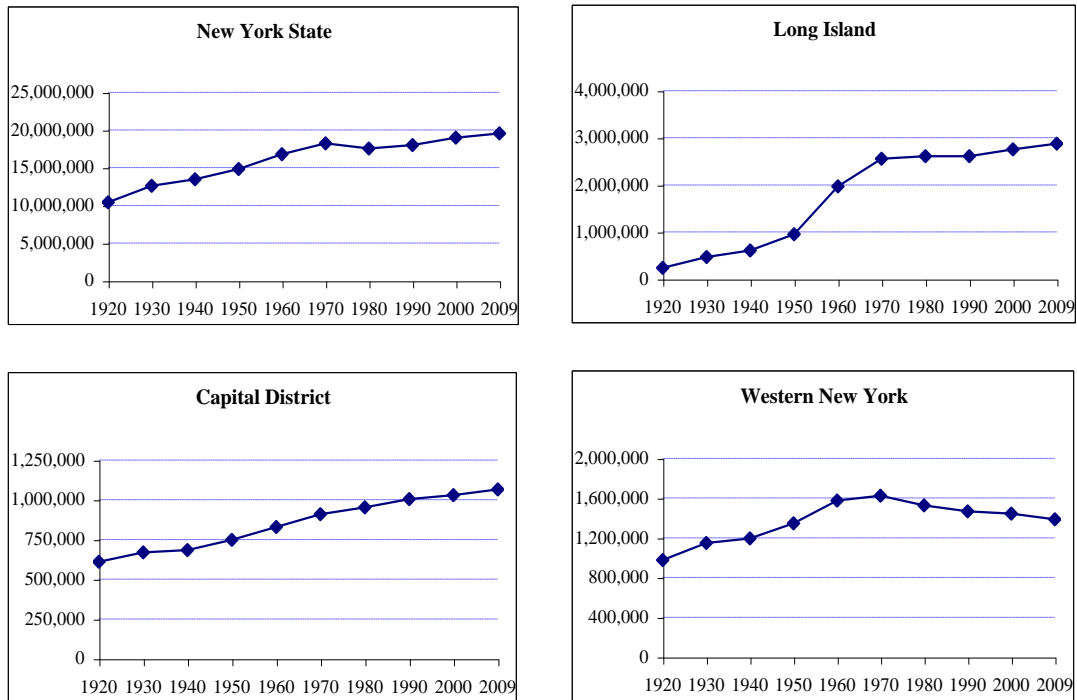
Each region grew at its own rate during the 20<sup>th</sup> Century. Patterns of growth tend to fall in one of three types:

- Uninterrupted, slow growth: Capital District
- Slow growth following a period of fast growth: Long Island
- Persistent decline after rapid growth: Western New York

New York City grew each decade by over 7% on average from 1920 to 1970. Throughout its history, the growth of the City has been fueled in part by its role as port of entry for successive waves of immigrants, in addition to remaining a point of attraction for many young Americans. For the past four decades, however, New York City's population has barely grown.

Two regions have experienced rapid growth in the first part of the 20<sup>th</sup> Century: the Mid-Hudson Region, which grew on average 21% every decade, and, especially, Long Island, whose population exploded between 1950 and 1970. In part, these two regions have benefited from their proximity to New York City. After 1970, growth slowed considerably, although it has remained among the highest in the State.

### Patterns of Population Growth Across New York State 1920-2009



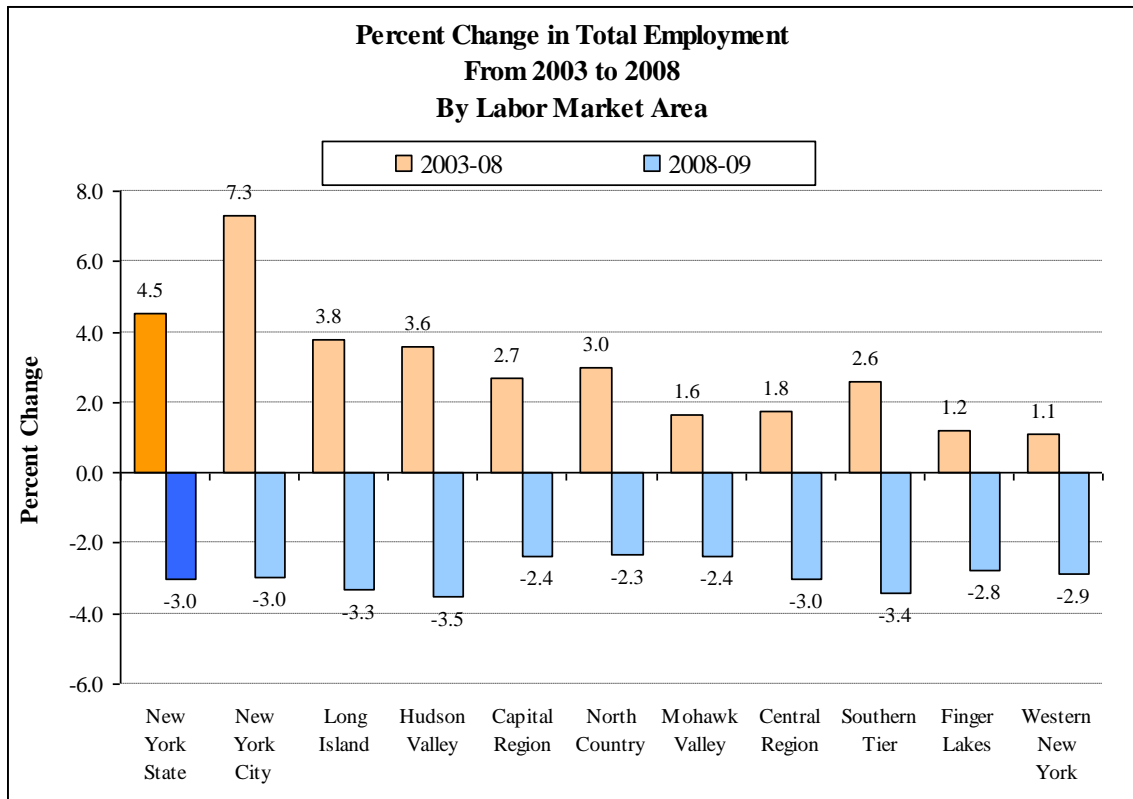
Data: U.S. Census Bureau

The Capital Region has shown remarkable consistency in its moderate growth from 1920 to 2009. Its population growth remains the 2<sup>nd</sup> most dynamic in New York State today, after the Mid-Hudson Region. The North Country population grew slowly from one decade to the next, and shows little change. The Mohawk Valley had only moderate growth from 1920 to 1970, and has been declining ever since. The Mohawk Valley’s initial fortune turned after subsequent industrial development bypassed the region.

Remarkably, the regions known today for their lack of demographic vitality, Central New York, the Southern Tier, the Finger Lakes, and Western New York, had shown vigorous growth until the 1970s. Typically, each of these harbored a strong industrial core that had been attracting workers from around the world. These regions have experienced stagnation or decline after 1970.

## Uneven Employment Growth

From 2003 to 2008, employment has grown unevenly across the State. The number of jobs in New York City jumped over 7% during the period. Elsewhere, growth was slower. Employment rose significantly more quickly in the Long Island and Mid-Hudson labor market areas than in the western-most regions of the State -- the Finger Lakes and Western New York. Slower growth was also recorded in the Mohawk Valley and Central New York regions.



Data: QCEW, US-DOL, BLS

The last recession hit all New York's regions with rapid job losses. The most affected regions were those that had known the fastest expansion in the previous period. The area west and south of the Mohawk Valley experienced acute decline without having known significant growth during the previous period of expansion. Only in the Capital Region, the North Country, and the Mohawk Valley was the drop in employment somewhat less severe than elsewhere.

## **New York's Economy Is Oriented Towards Services**

Statewide, 55% of private employment is in service industries, primarily services to persons: health care, social assistance, retail trade, accommodation, and food services. Compared to other areas in the State, health care and social assistance employment is highest in the North Country and the Mohawk Valley; accommodation and food services employment in the North Country; and retail trade employment again in the North Country and in Long Island, the Hudson Valley, the Capital Region, and the Mohawk Valley.

In New York State, nearly 20% of workers are employed by government. This proportion jumps to 25% in the Capital Region and the Mohawk Valley and even to 30% in the North Country. It is lowest in New York City and Long Island.

Employment in professional, technical, finance, and insurance services, primarily oriented to business, is concentrated in New York City. The proportion of employment in those industries is particularly low in the Mohawk Valley and the North Country, each lacking a large city and being predominantly rural.

Wide differences characterize the proportions of employment in manufacturing across regions. In the Southern Tier Region, in particular, nearly one in five jobs is a manufacturing job. Compared with the State as a whole, significant manufacturing employment is found also in the Mohawk Valley, Central New York, Finger Lakes, and Western New York regions.

The Southern Tier Region's economy depends on employment in education to a larger extent than elsewhere in the State, as does the Mohawk Valley's in the transportation and warehousing sectors.

For several decades, countless manufacturing jobs have shifted to other states or abroad. New York's regions have not all experienced the transition away from manufacturing at the same time. For instance, the loss of manufacturing industries in the Mohawk Valley started earlier than in other areas. The current loss of manufacturing jobs in western regions seems inevitable, as is the parallel decline in population. On the other hand, it is possible that some areas, such as in the Finger Lakes region, are better equipped to successfully resist the decline of manufacturing employment.

**Employment in New York State Regions in 2009  
Percent Distribution by Industrial Sector**

	New York State	New York City	Long Island	Hudson Valley	Capital Region	North Country	Mohawk Valley	Central New York	Southern Tier	Finger Lakes	Western New York
<b>Total, All Industries</b>	8,202,896	3,564,149	1,182,719	861,350	497,778	152,140	192,453	339,762	265,965	533,351	613,229
<b>Public Administration</b>	1,438,410	547,961	190,050	161,496	119,749	46,273	47,228	64,401	56,085	90,626	114,541
Percent of Total, All Industries	17.5	15.4	16.1	18.7	24.1	30.4	24.5	19.0	21.1	17.0	18.7
<b>Total, All Private</b>	6,764,486	3,016,188	992,669	699,854	378,029	105,867	145,225	275,361	209,880	442,725	498,688
Percent of Total, All Industries	82.5	84.6	83.9	81.3	75.9	69.6	75.5	81.0	78.9	83.0	81.3
<b>Percent Distribution of Private Employment</b>											
Total Private	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Health Care and Social Assistance	18.5	18.7	18.4	19.7	18.5	20.7	24.5	16.5	17.3	17.5	16.9
Retail Trade	12.6	9.5	15.3	15.6	15.2	20.5	15.9	14.5	14.6	13.8	14.4
Accommodation and Food Services	8.4	7.9	7.7	7.9	9.4	12.1	9.0	9.6	9.1	8.4	10.3
Professional and Technical Services	8.0	10.4	7.0	5.9	8.3	2.6	3.6	5.8	4.6	5.2	5.6
Finance and Insurance	7.2	10.3	5.3	4.4	5.7	2.4	5.7	5.0	3.7	3.3	5.3
Manufacturing	7.0	2.7	7.5	7.3	7.6	11.0	12.3	12.1	18.2	15.8	13.3
Administrative and Waste Services	5.7	5.9	6.2	5.3	4.7	3.1	3.0	5.6	4.0	5.6	6.7
Other Services	4.7	4.7	4.8	5.2	4.8	4.4	3.9	4.2	3.9	4.1	4.6
Construction	4.7	3.9	6.3	6.1	5.2	5.9	3.6	4.8	3.9	4.2	4.2
Wholesale Trade	4.5	4.3	6.2	4.4	3.8	2.8	3.2	5.5	3.2	4.0	4.4
Educational Services	4.3	4.6	3.0	4.2	4.3	2.5	2.7	4.0	8.5	5.7	3.0
Information	3.5	4.9	2.6	2.7	2.8	1.8	2.3	1.9	1.8	2.2	1.8
Transportation and Warehousing	3.2	3.4	3.1	3.3	2.9	3.3	5.4	3.6	2.0	2.0	3.0
Real Estate and Rental and Leasing	2.6	3.8	1.6	2.1	1.5	1.4	1.0	1.5	1.1	1.6	1.4
Arts, Entertainment, and Recreation	2.0	2.2	2.1	2.2	1.9	1.4	1.7	1.8	1.3	1.8	1.6
Management of Companies and Enterprises	1.9	1.9	1.7	1.8	1.9	1.0	1.0	1.5	0.9	2.8	2.4
Utilities	0.6	0.5	0.4	0.8	0.5	0.7	0.5	1.3	0.8	0.4	0.5
Agriculture, Forestry, Fishing & Hunting	0.3	0.0	0.3	0.4	0.6	2.0	0.4	0.7	0.7	1.4	0.4
Unclassified	0.3	0.4	0.4	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Mining	0.1	0.0	0.0	0.1	0.2	0.3	0.2	0.1	0.4	0.1	0.2

Data: NYS-DOL

## Are New York’s Regions Losing Their Younger Workers?

Population By Age Group, 2008							
Percent Distribution							
	Population	All	Age Groups				
			0 - 17	18 - 24	25 - 44	45 - 64	65+
New York City	8,363,710	100.0	22.9	9.7	30.6	24.4	12.4
Long Island	2,863,849	100.0	23.5	9.5	23.9	29.1	14.0
Mid-Hudson	2,282,116	100.0	24.0	9.8	25.3	27.7	13.1
Capital Region	1,061,782	100.0	21.0	10.7	26.8	27.4	14.1
Central New York	771,919	100.0	22.2	12.0	25.6	26.8	13.5
North Country	424,217	100.0	20.7	12.7	28.7	24.6	13.4
Mohawk Valley	434,424	100.0	21.1	9.8	26.0	26.9	16.2
Southern Tier	708,544	100.0	19.8	13.5	25.2	26.2	15.2
Finger Lakes	1,192,301	100.0	22.1	11.4	25.1	27.6	13.8
Western New York	1,387,435	100.0	21.4	11.1	24.4	27.5	15.5
U.S.	304,059,724	100.0	24.3	9.8	27.4	25.7	12.8

Data: U.S. Census Bureau

Shaded areas show that percent is smaller than in the U.S.

The age composition of the populations of New York’s regions, compared with that of the U.S. population as a whole, indicates that most of them have relatively fewer individuals in the 25-44 age group. This is significant insofar as a vibrant economy is deemed necessary to attract younger workers. Indeed, in New York City, where employment grew rapidly following the 2001 recession, the proportion of individuals ages 25-44 is greater than in the U.S.

Conversely, the proportions of individuals ages 45-64 in the populations of all New York’s regions except the North Country is greater than in the U.S. population as a whole, confirming that the working age population is generally older in New York State. As for the 0-17 year-old population, it tends to be smaller in New York than in the U.S. This possibly reflects the “deficit” in the 25-44 age group, the group that is more likely to start families.

The 18-24 age-group is over-represented in a majority of New York’s regions. This may be partly explained by the presence of numerous, highly regarded schools across the State. Significantly, New York City and Long Island do not conform to the pattern. It is possible that, unless they are students, young individuals tend to leave areas known for their expensive housing markets.

## New York's Population Is Highly Trained

Educational Attainment of the Population Aged 25+							
2006-08							
U.S., New York State, and Selected Regions							
	Total	All	No HS Diploma	HS Graduate	Some College	Bachelor's Deg.	Graduate/ Profess
Capital District	720,482	100.0	10.4	31.2	27.6	16.9	13.8
Long Island	1,911,964	100.0	10.7	28.9	24.7	20.0	15.7
Western New York	935,074	100.0	12.3	33.2	29.3	14.1	11.1
New York State	12,998,952	100.0	15.9	29.0	23.5	18.1	13.6
United States	197,794,576	100.0	15.5	29.6	27.5	17.3	10.1

Data: U.S. Census Bureau

Shaded areas highlight where percentages are smaller than the U.S. averages.

Compared with the U.S. as a whole, a larger percentage of New Yorkers ages 25 and older have Bachelors degrees or higher. This pattern is reflected in all of the regions except Western New York. One possible explanation may be that many individuals with higher education credentials have been more likely to leave the region as job prospects diminished. Areas such as Long Island, with the proximity of New York City and its jobs, or the Capital District with its government jobs, have been more successful in attracting and retaining highly trained people.



## ROUNDTABLE

### EMERGING WORKFORCE AND LONG ISLAND'S HIGH TECH INDUSTRIES

May 28, 2009

#### Summary Highlights

**Assemblymembers:** **Marc Alessi**, Subcommittee on Emerging Workforce  
**Francine DelMonte**, Commission on Science and Technology

**Roundtable Participants:** **Gary D. Bixhorn** - Eastern Suffolk BOCES; **Janet Caruso** - Nassau Community College; **Roger Clayman** - Long Island Federation of Labor; **Cheryl Davidson** - Long Island Works Coalition; **Anil Dhundale** - Long Island High Technology Incubator, Inc.; **Thomas J. Garry** - Jaspan Schlessinger, LLP.; **Joseph Gergela** - Long Island Farm Bureau; **Barry Greenspan** - Empire State Development; **Lorraine Greenwald** - Farmingdale State College; **Mark Grossman** - NYS Department of Labor/Long Island; **Angeline Judex** - NYS Center for Advanced Technology in Medical Biotechnology; **Pam Killoran** - Suffolk County Workforce Investment Board; **Paul Lavella** - Metro Energy Group; **John Lombardo** - Suffolk County Community College; **Patricia Malone** - Stony Brook University; **Gilles Martin** - S'mart Winemaking; **Stephanie Martin** - NYS AFL-CIO; **Raj Mehta** - Infosys International Inc.; **Andrew J. Mitchell** - Peconic Bay Medical Center; **Dan Perkins** - The Long Island Association  
**Katie Raftery** - Cold Spring Harbor Laboratory; **Clinton T. Rubin** - NYS Center for Advanced Technology in Medical Biotechnology; **Michael E. Russell** - State University of New York  
**Kamal Shahrabi** - Farmingdale State College; **Yacov Shamash** - Stony Brook University; **Satya Sharma** - Stony Brook University; **Ira Tane** - Long Island Builders Association; **Nathan Tinker** - New York Biotechnology Association; **Thomas Torre** - Metro Energy Group; **Michael Watt** - Long Island Builders Association; **Kenneth White** - Brookhaven National Laboratory.

Assemblymembers Alessi and DelMonte welcomed the participants to Stony Brook University's Center of Excellence in Wireless and Information Technology, and charged the group with exploring the capacity of our workforce and our workforce training system to meet the demands of high tech careers and high tech industries.

The participants engaged in a wide-ranging discussion about workforce, technology, and economic development. There was general agreement on some of the important matters before the group: careers and career training is becoming increasingly technical at all levels; health and energy sectors are central in driving this change; and these issues are also connected to other economic development issues including access to capital and affordable housing.

## **Technical Careers**

Several participants noted the nature of many jobs is changing. Entry level positions, such as those in health care, increasingly require technical knowledge. Although universities continue to research and develop new technologies, many sophisticated technologies are being rapidly deployed beyond the university setting. Health care and energy were cited by several as sectors where careers and related technical changes are the most dramatic. Students need new skills sets to meet the demand of these careers.

Community college and BOCES representatives advocated the development of career academies and other efforts to better link academic subjects and industrial careers. Academic programs need to be clustered around industries rather than disciplines to better show how different careers can develop and how different core subjects are related to those careers. More adult education opportunities are needed in light of changes in workforce. Attention also needs to be paid to basic skills such as interview techniques to helping new, emerging workers succeed.

## **Health Care, Energy and Agriculture**

Developments in the health and energy sectors are central to defining jobs for emerging workers. The increased use of technology for all levels of jobs is redefining careers. Robotics and personalized medicine are moving out of the university setting to community hospitals. These evolutionary changes align with a more recent shift in federal research in these sectors. New research partnerships at Stony Brook and Brookhaven National Laboratory (BNL) will help generate new businesses and new jobs. The new BNL advanced energy center is being built as part of a partnership between IBM, GE and the federal government.

Agriculture is another important Long Island economic sector that reflects the transition to a more technological approach to careers and workforce development. More vineyard and other agriculture jobs are being redefined to require more complex technical and scientific knowledge. As at least one participant observed, more and more jobs are being professionalized. This development should be extended for other jobs as well to help turn jobs into careers.

## **Tasks**

Agreement was unanimous that greater cooperation and collaboration was needed between all the stakeholders. Workforce development also needs to consider the larger economic development picture. Workers need to have affordable housing in Long Island to help them stay. Businesses coming out of our universities and incubators need access to capital to help them grow so that they can continue to create jobs.

It was recommended that successful programs such as STEP and C-STEP be expanded to provide access to a broader range of students. Other participants noted that the time was right to take advantage of expanded federal funding to improve teacher training opportunities.

## **Next Steps**

The session concluded with the participants agreeing to:

- Maintain communication as the series of emerging workforce discussions continues across the regions of the state;
- Look at strengthening existing programs that work well rather than creating new ones;
- Look at best practices in other states for guidance; and
- Encourage a comprehensive approach that includes efforts to build capital and encourage business development as well as efforts to support quality of life concerns, such as affordable housing.



## HEARING

### EMERGING WORKFORCE AND THE CAPITAL REGION'S HIGH TECH INDUSTRIES

June 9, 2009

#### Summary Highlights

Led by Assemblymembers, **Francine DelMonte**, Chair, Commission on Science and Technology

**Marc Alessi**, Chair, Subcommittee on Emerging Workforce, **Joan Christiansen**, Chair, Commission on Skills Development and Career Education, and **Dennis Gabryszak**, Chair, Task Force on University-Industry Cooperation, a hearing was held in Albany to continue the Assembly's exploration of this important issue.

In addition, the following Assemblymembers were present to receive testimony: **Robin Schimminger**, Chair, Committee on Economic Development, Job Creation, Commerce and Industry, **Mark Weprin**, Chair, Committee on Small Business, along with members of the Labor, Economic Development and Education Committees: **Barbara Clark**, **Tim Gordon**, **Peter Lopez**, **Brian Kavanaugh** and **Kenneth Zebrowski**.

**Witnesses:** **Ed Baker**, President, Schenectady County Community College; **Ron Bucinell**, Professor, Union College; **Craig Dory**, Associate Director, RPI Center for Advanced Technology; **Mike Fancher**, Vice President, Business Development & Economic Outreach, Associate Professor of NanoEconomics, College of Nanoscale Science and Engineering – U Albany; **Daniel Gentile**, Executive Director, Capital Region Workforce Investment Board; **Penny Hill**, Regional Director for the Capital District Workforce Development Institute (WDI); **J. Cullen Howe**, Lawyers for Green Jobs; **Tim Lance**, President & Chair, NYSERNet, Inc.; **Trudy Lehrer**, SuperPower, Inc.; **Drew Matonak**, President, Hudson Valley Community College, and **Mario Mussolino**, NYS Department of Labor; **Ed Reinfurt**, Executive Director, NYSTAR; **Brian Russell**, Vice President – Human Resources, Albany Molecular Research, Inc. (AMRI); **Paul Shatsoff**, WDI; **John Twomey**, Executive Director, New York Association of Training and Employment Professionals (NYATEP); and **Willie L. Vice**, Statewide Coordinator, ATTAIN Project, University Center for Academic and Workforce Development, U Albany. Written testimony was also received from **Richard Blais**, Senior Advisor, Project Lead the Way=

Assemblymembers Alessi, DelMonte, Christensen and Gabryszak opened by stating their priorities for the hearing: matching the needs of the Capital Region's emerging high tech industries with the regional workforce. They noted that the purpose of the Hearing was to identify emerging

industries and learn how government, industry, labor, education, and training entities are working together to meet the needs of these industries. Witnesses were asked to offer testimony on how emerging industries make their workforce needs known to the institutions that are responsible for educating emerging workers, as well as on the collaborations among businesses, academic institutions, labor organizations and workforce development, and on the role that the State is able to play in maximizing the collaborative efforts.

Although the witnesses represented varied institutional perspectives, several familiar and overlapping themes emerged from the examples given in their testimony:

**Role of the Research University in Emerging Workforce Education.** Specific programs have been and are being developed that respond to industry needs, including an array of degree granting opportunities in the field of nanotechnology. This particular set of programs create an “instructional continuum from elementary education up through certificate level skills training” These include partnerships among four-year and two-year colleges, degree programs that combine advanced business degrees with specific content areas such as nanotechnology, high tech trades training, and innovative programs that engage students as young as elementary age. Efforts also include reaching out to traditionally underrepresented social and ethnic groups in high tech fields.

Witnesses spoke, too, of the collaborations underway between community colleges and traditional research universities and industry, such as SuperPower in Schenectady. Such programs feed the business’s specific workforce demands and, in so doing, spawn new academic programs, new facilities, new equipment, all coming together to continually educate, train and enhance the quality of the workforce and, in turn, the quality of the company (and, ultimately, other companies). It was also stressed that there needs to be an ongoing and dynamic relationship between businesses and institutions of higher education, and also among the institutions themselves so that programs that need to be developed to meet specific industry/company needs are designed and implemented most efficiently and effectively.

**Role of the Community College in Emerging Workforce Education.** There is a community college representing every county in the State and these entities can be considered “the best economic and workforce development tool” for New York. These post-secondary education institutions, in addition to serving as a springboard to a four-year institutions, offer essential two-year training programs that have been developed in collaboration with industry. One example of the collaboration is that each academic program has an advisory committee that includes business and industry representation. Responsiveness to industry needs also includes non-credit offerings.

**Collaboration among State and local agencies and Industry.** Good collaborations that make it easy for local businesses to connect with an appropriate agency at both the local and State levels are seen as absolutely crucial to industry’s ability to making its workforce needs known. As federal funds become available through different agencies, and as industry needs change and expand, there has to be a reliable information resource getting the word out about funding opportunities. Witnesses highlighted successful collaborations in the Capital region in such fields as green jobs, nano and biotechnology. Witnesses also spoke about the ultimately unproductive overlap and duplication of agencies applying for and utilizing job training funds.

**Resources should be and are being made available for underserved communities.** Several witnesses including, Willie Vice, of ATTAIN, and Mario Mussolino, NYS Labor Department, outlined some of the means in which efforts are being undertaken to assist entry-level workers to develop skills for the technology workforce. Basic skills, including literacy, are even more important in a high tech workforce. Concerns were expressed that these entry-level workers present a great challenge, and that in the past programs to provide assistance have not always met expectations. The complexity of the workforce system can be seen as part of the problem and an effort to make the system more easily navigable from various entry points is essential.

A real concern is the mismatch between skills needed in the emerging and expanding high tech industries and the skills of the workforce of the future. This disconnect was referred to often during the Hearing. John Twomey, NYATEP, noted that if declining literacy skills are not halted, and if the direction is not reversed, the result will continue to be unskilled and unemployed individuals unable to meet the needs of industry. Both sides, employers and potential employees, will remain underserved. Underscoring this issue is the startling statistic that nationally, according to a recent report by the National Association of Adult Literacy, 14% of all working people fall into the category (Level 5), meaning they are essentially illiterate. As Twomey explained, they “can’t fill out a job application” let alone fill a job. New York State ranks 49<sup>th</sup> out of 50 states with 22% of working age people in Level 5. This speaks volumes to employers looking to locate their businesses here, conduct research and development here, commercialize and manufacture products and processes here.

**Importance of Early Development of Interests and Opportunities.** Many witnesses, in varying degrees, discussed the importance of capturing the interest of students in the sciences, mathematics and technology at an early age. Opportunities such as the projects undertaken by the Albany Nanotech were highlighted, but concerns remained that such efforts did still not reach enough students. It was noted, also, that federally-funded programs, such as the Summer Youth Employment Program, are a way in which students can become acquainted with workforce opportunities relatively early on in their education. The shortage of skilled workers for what’s been referred to as “middle skill jobs” makes it imperative to capture student interest early and productively.

### **Next Steps**

The Assemblymembers will be convening an additional roundtable discussion in Western New York at Niagara University on September 14<sup>th</sup> to examine the issue in a different regional setting. Following this event, the Assemblymembers expect to compile their findings and develop recommendations for the coming legislative session.



## ROUNDTABLE

### EMERGING WORKFORCE AND WESTERN NEW YORK'S HIGH TECH INDUSTRIES

September, 14, 2009

#### Summary Highlights

**Assemblymembers:** **Francine DelMonte**, Commission on Science and Technology  
**Marc Alessi**, Subcommittee on Emerging Workforce  
**Dennis Gabryszak**, Task Force on University-Industry Cooperation  
**Robin Schimminger**, Committee on Economic Development, Job Creation, Commerce and Industry.

**Roundtable Participants:** **Rebecca Albright**, Board Member Orleans/Niagara BOCES; **Luba Chliwniak**, Ph.D., Vice President of Academic Affairs, Niagara County Community College; **Jason Clark**, Director of Economic Development Business Development Corporation for a Greater Massena; **Joseph A. Fernando**, Ph.D., Director, New Products & Business Development, Unifrax Corporation; **James Finamore**, Executive Director, Buffalo and Erie County Workforce Investment Board, Inc.; **Dr. Kathryn Bryk Friedman**, Deputy Director, University at Buffalo Regional Institute; **Matthew Fronk**, Chief Engineer, GM Fuel Cell Division; **Clark J. Godshall**, Ed.D., District Superintendent, Orleans/Niagara BOCES; **Peter Kay**, Economic Development Director and **Joe Colure**, Economic Development Specialist, City of Niagara Falls, N.Y.; **Jerry Kozlowski**, Dean, The BEST Center and Campus Centers, Genesee Community College; **Mark Laurrie**, Deputy Superintendent, Niagara Falls City School District; **Dr. Marnie LaVigne**, Director of Business Development, The Center for Advanced Biomedical and Bioengineering Technology (UB CAT); **Honor Martin**, R.N., M.S., Director of Education & Organizational Development, Mt. St. Mary's Hospital; **Ann Mestrovich**, Manager, Business Development, Buffalo Niagara Partnership; **David A. Palmer**, Upstate NY, New England and Connecticut Area CWA Director, CWA District 1; **Peter Pecor**, Executive Director, RochesterWorks, Inc.; **Joseph A. Ruffolo**, President & Chief Executive Officer, Niagara Falls Memorial Medical Center; **Judy Tederous**, Niagara County Department of Labor; **Paul Tolley**, CEO, Infotonics Technology Center; **Dr. Mark Wilson**, Dean, College of Business Administration at Niagara University.

Following opening remarks by Business School Professor, Dr Steven Mayer, Assemblymembers DelMonte, Alessi, Gabryszak and Schimminger welcomed the participants to Niagara

University, and charged the group with exploring the capacity of our workforce and our workforce training system to meet the demands of high tech careers and high tech industries.

Dr. Friedman opened the discussion by highlighting some recent findings from the University of Buffalo Regional Institute research on the labor market in Western New York. One of the most striking observations was that the area has not experienced as much of a “brain drain” as some other parts of the state. Western New York retains many of its college graduates, but it has not attracted new migrants to the area.

The participants engaged in a wide-ranging discussion about workforce, technology, and economic development. There was general agreement on the need to maintain and strengthen collaboration amongst the stakeholders. The group agreed to continue to meet as needed to share ideas and work out problems. Another important aspect of the discussion was the concurrence that workforce issues must be considered within the general context of economic development policy.

### **Technical Careers**

Echoing the other regional discussions, several participants noted the nature of many jobs is changing. Entry level positions, such as those in health care, increasingly require technical knowledge. Health care was cited as a sector where careers and related technical changes are very dramatic. Other significant growth sectors for the region are biotechnology and the gaming industry. Students need new skills sets to meet the demand of these careers, and there needs to be more recognition that a four-year degree is not essential for many new technical jobs.

More adult education opportunities are needed in light of changes in workforce. Both BOCES and community colleges were seeing growing enrollment in mid-career workers (30-40 years) who were seeking new skills for new jobs. Community colleges are also seen a possible location for more business incubators and provide a good model for collaboration both amongst themselves and between the elements of the workforce continuum.

### **Marketing and Commercialization Issues**

Several discussants voiced concerns that the key issue is to stimulate demand for workers by improving the business climate in New York, and taking other steps to encourage business growth. Commercialization should be easier with more coordinated support from the State and more incubators to help grow the new businesses. It was observed that while health care is obviously an important sector of the regional economy, steps need to be taken to build other elements that help drive the economy, like manufacturing.

Another related concern/recommendation was for a better branding of the Western New York region, and the State as a whole. In general, some maintained, a better job needs to be done to make known the assets that the State and region hold in terms of educational infrastructure, trained workforce and facilities for business. Coordination needs to be done for all aspects of economic development including simplifying applications for business assistance and providing

more synchronized assistance to business. It was recommended that the State devote more resources towards commercialization rather than research.

### **Next Steps**

Agreement was unanimous that greater cooperation and collaboration was needed among all the stakeholders. Workforce development also needs to consider the larger economic development picture.

The session concluded with the participants agreeing to:

- maintain communication as a regional forum;
- look at strengthening existing programs that work well rather than creating new ones;
- review best practices in other states for guidance; and
- encourage a comprehensive approach workforce development that includes efforts to further business growth.