

**TESTIMONY OF JONATHAN BOWLES
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**HEARING, GOVERNOR'S TASK FORCE ON DIVERSIFYING
THE NEW YORK STATE ECONOMY THROUGH
INDUSTRY-HIGHER EDUCATION PARTNERSHIPS**

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Good morning. My name is Jonathan Bowles and I am director of the Center for an Urban Future, an independent policy institute that publishes studies primarily about economic development and workforce development issues in New York. Some of our recent studies have examined the economic development potential of the city's Health IT and video game development sectors, and the increasingly important role that immigrant entrepreneurs are playing in New York's economy.

A little less than two weeks ago, we published a new study titled "Building New York City's Innovation Economy." Our report, which was funded by the Alfred P. Sloan Foundation and based on about three years of research, found that while New York City is home to several of the world's leading scientific research institutions, these universities and research centers have not yet become powerful catalysts for entrepreneurship and local economic development the way similar institutions have in a number of other regions. The study concluded that New York's longtime failure to harness the full economic development potential of its pre-eminent academic research institutions is an enormous missed opportunity, especially given that urgency with which New York now needs to diversify its economy and cultivate new engines of job growth.

The report was accompanied by an online Innovation Index, a compilation of 49 charts and graphs that show where New York stands compared to other cities and regions on a broad range of indicators measuring both existing science and technology assets and the city's level of success at commercializing these assets.

I won't go over all of the findings today. But I will mention a few statistics:

- While New York City's colleges and universities are among the nation's leaders in receiving federal funds for research and development, the city's colleges and universities had a lower amount of industry-financed R&D than all of the other regions we examined, including Raleigh-Durham, Boston, San Francisco, Los Angeles, Philadelphia, Baltimore, Seattle, San Diego and Chicago. In 2006, industry-financed R&D in the city totaled \$39.7 million – a fraction of the total for Raleigh/Durham (with \$182.3 million), Boston (\$118.4 million) and San Francisco (\$96.1 million).
- A shockingly small number of New York City-based entrepreneurs have taken advantage of the federally-funded SBIR and STTR programs. In 2006, New York City received just 43 of the 249 SBIR awards handed out statewide (17 percent). The city accounted for less than a quarter of the total for the metro region (181 awards), which was itself a fraction of the number going to the San Francisco Bay area (322), the Los Angeles area (454) and the Boston area (652). New York City fared no better with the STTR program. The city received only seven of the 37 STTR awards dispersed statewide in 2006 (19 percent). The total for the metro region was slightly higher (25 awards). Most other leading tech centers received more STTR awards, including Boston (92), Los Angeles (52), San Francisco (33) and San Diego (27).
- New York City colleges and universities spend less than one third on engineering R&D as their counterparts in Boston and the San Francisco Bay area. Only one

New York City institution was among the top 100 U.S. universities for R&D expenditures in engineering (Columbia, 50th out of 100).

There are a host of reasons why New York's science and technology assets haven't translated into more economic activity, from the lack of affordable lab or office space for start-up ventures to the overall cost of doing business here and insufficient government focus on growing a tech sector. But our research finds that New York's universities and research institutions themselves have been a big part of the problem.

We show that the leaders of the city's academic research institutions have not been sufficiently supportive of efforts to spin off new tech ventures; have not dedicated enough resources to engineering programs; have done little to foster a culture of entrepreneurship among faculty, students and technology transfer officers; have had limited collaborations with industry; and, in many cases, have favored licensing the technologies from university research to existing firms (rather than to start-ups).

To be sure, some of the city's top research institutions have made substantial progress in the past year or two. And the problems we identified are certainly not unique to New York. But there is much at stake in trying to figure out how to solve some of these problems and turn our academic research institutions into the entrepreneurial engines they can be.

What should be done?

First, I think it's important for this task force to look at previous efforts to foster the growth of emerging technology sectors in New York State and attempt to understand why many of them failed. I'm far from an expert on this question. But for me, one conclusion is that developing an innovation economy requires a lot more than just building incubators, research parks or other facilities. It can't just be a real estate play. Another is that New York's academic research institutions are an integral part of the equation; they

need to seed a lot more entrepreneurial ventures and play a role in helping those emerging businesses succeed locally.

There's a lot that New York universities should do. The leaders of each of New York's scientific research institutions should send a strong message to their deans, technology transfer officers, faculty and students that the commercialization of research into newly formed startups is a clear institutional priority—on equal footing with licensing technologies to existing companies. They should back up this policy by doing more to support scientists that wish to go the start-up route, such as setting up or expanding proof-of-concept centers and making it standard practice to connect entrepreneurial-minded scientists with angel networks, venture capital firms and experienced entrepreneurs; and creating more linkages between their science departments and business schools.

The universities can also help by promoting a more entrepreneurial culture among faculty and researchers. The institutions should offer more courses in entrepreneurship, writing business plans and how to access financing—and routinely bring in outside tech entrepreneurs, angel investors and industry leaders to provide advice and share ideas.

University leaders should also place a greater emphasis on spin-offs that aren't researcher-led. Not all scientists are interested in or capable of forming a startup venture to commercialize their research. But that doesn't mean that their research discoveries can't be spun off and developed by other tech entrepreneurs. New York's research institutions should commit to get promising technologies into the hands of local entrepreneurs who would lean on the faculty inventor for scientific advice but use their own know-how and drive to bring a technology to market.

State economic development officials should not wait for universities to make all these changes on their own. It may never happen. Rather, state officials should seek to leverage state support to get universities to take these steps. For instance, make state allocations for incubators or other projects contingent upon the host institution taking aggressive steps to support start-ups and promote a more entrepreneurial mindset.

Both state and local economic development agencies can also help regions create an environment in which networking among scientists, engineers, investors, entrepreneurs, business executives, tech transfer officials and intellectual property lawyers is common and expected. Casual encounters of this sort are often where ideas are honed, collaborations are hatched and deals struck. In Silicon Valley, this type of environment happens naturally. Where it does not come naturally, governments can help by establishing an innovation intermediary—with the mission of facilitating regular interactions between scientists and engineers, inventors and investors, academic officials and business executives, entrepreneurs and mentors.

I would also urge state officials to implement the recommendations of the 2007 report conducted by A.T. Kearney, which called upon the state to overhaul ESD and institute a new approach with much greater emphasis on supporting the innovation economy.

Similarly, I would recommend that ESD begin to think small. The agency is often still associated with large development projects and efforts to retain large or mid-sized companies that have little long-term potential for growth. There is certainly a role for retention, but ESD must reorganize itself to become an agency that's identified as much for supporting the next generation of entrepreneurs and small businesses with extraordinary growth potential.