

**Hearing on the Impact of Globalization and Trade with China
on New York State Companies and Communities
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Testimony before the US-China Economic & Security Review Commission

Testimony from:

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Thank you for this opportunity to submit testimony to the **US-China Economic & Security Review Commission**. I am Nabil Nasr, Director of the Center for Integrated Manufacturing Studies and The Golisano Institute for Sustainability, both located here on the campus of Rochester Institute of Technology.

The Center for Integrated Manufacturing Studies, or CIMS, was established in 1992 with a mission to increase the competitiveness of manufacturers through technology development and transfer. CIMS represents a dynamic collaboration of in-house technical experts, as well as academic, industry and government resources. CIMS' facility houses multiple research centers focused in specific technologies and industry sectors. These centers include: the National Center for Remanufacturing and Resource Recovery (NC3R), Systems Modernization and Sustainment Center (SMS), Center for Sustainable Mobility, Center for Sustainable Production (CSP), and New York State Pollution Prevention Institute (NYSP2I).

Each of these centers embodies programs that contain both focused research efforts and an active industry outreach. The success of these programs resulted in CIMS becoming a recipient of the U.S. Department of Commerce's Economic Development Administration's (EDA) Excellence in University Led Strategies award for 2009. The EDA award recognizes innovative economic development projects or strategies of national significance and showcases best practices achieving outstanding results.

It has been well documented that New York State is still undergoing significant job loss in the manufacturing sector, which is a point of interest for this commission. A multiyear research project entitled the Development of a Roadmap for the Revitalization of Upstate New York Manufacturing was conducted by CIMS to gain a clear understanding of the health of our manufacturing clusters in the region and identify what can be done to revitalize our manufacturing base. This work at CIMS has identified several needed

initiatives that could positively impact the New York State Economy. These initiatives are focused on expanding existing clusters into new areas such as: smart products technology integration, and sustainable mobility technology development in areas such as fuel cells. Other initiatives are focused on enhancing industry resources and collaboration including enhancing partnership between universities and industry, which is critical to leverage university resources to advance innovations and technology development. I will cover some of these recommendations as follows.

Let me start by discussing which industries have the potential to spearhead future economic growth of New York State. Based on my experience, there are several emerging high-potential industry sectors that could help fuel business growth in our state. They include:

- **Green Jobs:** The Pew Charitable Trusts finds that U.S. “green jobs” grew 9.1 percent between 1998 and 2007, versus 3.7 percent for the overall job market. According to this report, green jobs represent over half the size of employment in the traditional energy sector and it’s gaining.
- **Alternative Fuels:** Despite the recession, the U.S. bio-fuel industry grew by 34 percent last year, adding an additional 240,000 new jobs. With the push toward energy independence, this industry should continue to expand.
- **Fuel Cells:** Lux Research predicts that global commercial sales of fuel cells will reach \$1.8 billion in 2012. This growth will be driven primarily by applications in residential heat/power systems and distributed generation.
- **Green IT:** The Gartner group surveyed 620 organizations worldwide whether they were cutting spending to improve the energy efficiency of their IT systems. The results showed that for most businesses, green IT remains a priority. Forty-plus percent of survey respondents expected to spend more than 15 percent of their IT budgets on energy efficiency projects.
- **Bio-Informatics:** Bioinformatics is the application of information technology to the field of molecular biology. RNCOS, a market research organization, predicts that biometric product lines, software, and other applications will achieve an annual market growth rate of 15.8 percent by 2010.
- **Remanufacturing and recycling:** The remanufacturing industry is reinventing itself in response to the “green products” movement and many remanufacturers are growing. The U.S. remanufacturing industry generates \$65 billion in sales, with the automotive sector contributing \$37 billion of that total.
- **Smart Products:** Smart products and production systems offer a great opportunity for NYS businesses. Smart products leverage intelligent systems, embedded sensors, and connectivity to provide customers with advanced utility throughout the life cycle. Likewise, smart production systems use information age

technologies to optimize performance and quality while reducing environmental impacts and resource consumption. The value-add from smart products and systems applies to both large firms *and* small to mid-size manufacturing companies.

The New York State government has a significant role in promoting sunrise industries. Sunrise industries are high-risk/high-potential enterprises that often require additional support from government to succeed in the global marketplace. Our study of Upstate's industrial base found that the State government could aid high-potential manufacturers to compete globally by adopting these strategies:

- ***Strategic Alignment of Resources.*** Provide long-term support and planning assistance for clusters impacted by manufacturing transformation; and, link statewide planning with federal strategies, including support for regional companies in areas of national importance and assistance in seeking federal investments.
- ***Promote NYS exports*** by reforming policies surrounding exportation of New York centric products, and promote better linkage of company marketing and expansion efforts with cluster organizations and state resources.
- ***Global Market Expansion Tools:*** Create incentives for export-based manufacturing initiatives, and expand support to global market expansion programs.
- ***Research & Report Out On Global Markets:*** Perform periodic reviews of potential trade policy and global initiative impacts on NYS industry clusters and proactively communicate results to impacted clusters. Also, support efforts on behalf of NYS companies regarding global trade policy fairness.

Another key component in promoting future growth is the university system in New York State. There are tremendous resources available through our region's college and university system -- both public and private -- to assist manufacturers in advancing innovation through the development of advanced technology industries that are geographically near to the university. Unfortunately several challenges inhibit strong linkages between New York universities and area companies. CIMS' study found that 70 percent of regional manufacturers do not currently partner with universities, although over half of them *would* be interested in collaboration. At the root of this situation is a cultural divide between the for-profit business and non-profit research worlds. Companies said they were frustrated with the intellectual property restrictions, complex contracting processes, and slow responsiveness of many research organizations.

To improve linkages between the private sector and the universities, the State should reform intellectual property policies to encourage and facilitate more technology development and transfer. The State should also strategically link both universities and Centers of Excellence to specific industry clusters that stand the best chance of benefitting from this collaboration.

Despite these challenges, NYS has many bright examples of successful collaboration between advanced technology centers at NYS universities and industries. The work being done here at RIT-CIMS is a good example of encouraging the growth of advanced technology industries.

SUNY and other universities in New York State are operating a number of research centers and advanced R&D facilities in the region. They include Albany, Buffalo, Syracuse, Binghamton, and Rochester. These college and university-based research centers have remarkable potential for providing assistance to industry. Today, many centers are focused on transferring technology and research to companies in a wide variety of fields. However, many NYS industries and companies have not been able to take full advantage of these resources, and linkages between centers and industry have not been strong according to our industry survey. To leverage the resources contained within the region's research centers and advanced R&D facilities, the State should take an active role in connecting its Centers of Excellence to those industry clusters that could gain the most advantage from this form of partnership.

New York State is not alone in its desire to foster high-growth and sunrise industries. Many people know that China has created a number of successful industrial parks. I am often asked if this strategy should be emulated in upstate New York. It is true that the Chinese have a strong commitment to large, broad-focus industrial parks to serve as business attractor. Many have paid back their investments handsomely, but some have failed, which has proven very costly. Let's keep in mind that China-style industrial parks require massive long-term investments in planning, development, and infrastructure. I am not sure emulating this model is right for New York State. We in New York should leverage the strengths of Upstate. I suggest that the State support carefully selected and vetted high-potential business industry clusters. This would focus State funding on the best opportunities for sustainable business and jobs growth.

This concludes my testimony, and again I would like to thank the commission for the opportunity to testify today.

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