

Nanotechnology key to China's future economic success

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"China is betting that their growing investment in nanoscience will help them capture a large share of what shortly will become a \$3 trillion global market in nanotech manufactured goods, and that breakthroughs in nanotechnology research and commercialization will confer economic superpower status on the country that attains first mover advantage in this cutting-edge technology," stated Richard P. Appelbaum, professor at the University of California at Santa Barbara. "The Chinese government clearly understands that enhanced nanotechnology research capacity and marketable innovation go hand-in-hand. Both are key to their strategy for future commercial success, economic competitiveness, and continued economic growth."

Dr. Appelbaum made his remarks today at an event co-sponsored by the Project on Emerging Nanotechnologies, the Asia Program, the China Environment Forum, and the Program on Science, Technology, America and the Global Economy, at the Woodrow Wilson International Center for Scholars. The event, "Nanotechnology in China: Ambitions and Realities," focused on China's current and future capabilities to become one of the world's leading nanotechnology nations. The panel included Denis Fred Simon, an expert on Chinese science and technology policy and vice president of Academic Affairs at the State University of New York. It was moderated by Evan Michelson, research associate at the Wilson Center's Project on Emerging Nanotechnologies.

"Worldwide, nanotechnology has emerged as a critical area for science and technology competition—much like the race to be the first country

to put a man on the moon. China and the U.S. are both big players in the nanotech race. Each faces a number of significant competitive challenges and collaborative opportunities, including the need for internationally coordinated risk research strategies and effective oversight mechanisms," said Michelson. "It would be unfortunate if government agencies in both countries squandered this unique opportunity to help direct nanotechnology at a relatively early stage along a responsible path. Both nations need to work together to help engender public confidence in the private and public sectors ability to handle possible nanotechnology risks and to increase the capacity of public institutions to deal with the long-term implications posed by this cutting-edge innovation."

Dr. Simon situated China's nanotechnology research and investment capacity within the context of the country's long-term science and technology strategy. "China recently released plans to radically increase its research and development capabilities over the next fifteen years. It will be a grand experiment to see if the country can become a global innovation center. Central to these prospects are a number of key frontier technologies—including nanotechnology—aimed at ensuring the country's long-term competitiveness as it faces various funding, management, and organizational obstacles."

A senior Department of Commerce official recently claimed that China is rapidly "gaining on" the United States in nanotechnology. This news comes on top of the latest Organization for Economic Co-operation and Development (OECD) forecast that China will have spent more on research and development (R&D) than Japan in 2006, making it the world's second highest investor in R&D after the United States.

Michelson concluded by noting that "China's current nanotechnology research, education and manufacturing investments are only the tip of the iceberg. Over the coming years, there is the real potential for China

to rapidly advance in making new nanotech scientific discoveries that lead to commercializing new, innovative nano-based products that are produced by its burgeoning, highly skilled and relatively cheap workforce. Now is the time for the United States and others around the world to cooperate with the Chinese on risk research and work toward getting a suitable oversight system in place from the start to ensure a safe and level commercial playing field."

Dr. Appelbaum is professor of Sociology and Global and International Studies at the University of California at Santa Barbara. He currently serves as director of the M.A. Program in Global & International Studies, and serves on the Executive Committee of the Center for Nanotechnology in Society. He is also co-director of the Center for Global Studies in the Institute for Social, Behavioral, and Economic Research.

Dr. Simon is the provost and vice president for Academic Affairs of the Levin Graduate Institute of International Relations and Commerce under the State University of New York in New York City. He has written and lectured widely regarding innovation, high technology development, foreign investment and corporate strategy in the Pacific Rim and is frequently quoted in the Western and Asian business press regarding commercial and technology trends in China, Hong Kong and the Asia-Pacific region.

Mr. Michelson is a research associate for the Project on Emerging Nanotechnologies at the Woodrow Wilson International Center for Scholars in Washington, DC. Michelson received his masters degree in international science and technology policy from The George Washington University.

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