Proceedings of the China-U.S. Forum on Science and Technology Policy

Section V – Reports to the JCM

REPORT TO THE 12th (2006) MEETING OF THE UNITED STATES (U.S.) - PEOPLE'S REPUBLIC OF CHINA (PRC) JOINT COMMISSION ON SCIENTIFIC AND TECHNOLOGICAL COOPERATION (JCM)

ON THE

U.S.-CHINA FORUM ON SCIENCE AND TECHNOLOGY (S&T) POLICY

October 19, 2006
Intercontinental Hotel
Beijing

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The two-day China-U.S Forum on Science and Technology (S&T) Policy has been successfully completed. During the past two days, The Forum featured impressive presentations from delegates from China and the United States.

Through the Forum, we exchanged ideas and views about evolving S&T policy concerns on both sides with the objective of furthering understanding between us, strengthening the relationship, as well as identifying potential opportunities of additional cooperation. We also consider such communication as beneficial to both sides. However, the time was too short. Two days of communication is far from enough to dealing with S&T policy issues between China and America. Two days did satisfy us, since the talks could not cover all fields of interests. Nevertheless, even though the Forum was held for only two days, we still have discussed a large number of issues. So, now what I can present here are several personal impressions of this Forum.

I. Large-Scale, High-Level, and Good Quality

Technically, the aim for the forum was to evaluate the development of Sino-U.S S&T relationship since the normalization of Sino-U.S relations, and to try to learn some lessons from it, as well as to foresee the possible oncoming problems in cooperation. The Forum was sponsored by jointly by China's Ministry of Science and Technology, the Chinese Academy of Science, the National Natural Science Foundation of China, and US National Science Foundation, and the Motorola Foundation. It was organized by the National Research Center for Science and Technology for Development and George Mason University.

Large-scale Forum. We had an attendance of approximately 170, including leaders, specialists and scholars as well as entrepreneurs, in which 120 delegates were from China while 50 came from the United States.

High-level members. US participants included two former science advisors to the presidents, one former and one current university presidents, a former director of the National Science Foundation, the Director of the Science and Trade Policy Program at George Mason University, and several well-known scholars on China's S&T issues. There were six U.S. young scholars who were selected in a nationwide competition.

Participants from China included a former Vice Minister of the Ministry of Science and Technology Huang Qitao; a former ambassador to the United States, Li Daoyu; and five science and technology counselors to the United States. Also included were the President of Tianjin University, Long Ke; the former Deputy Secretary-General of China's Ministry of Science and Technology, Duan Ruichun; the Vice-President of the National Natural Science Foundation of China, Zhu Zuoyan; the Executive Vice President of the China Soft Science Research Center, Kong Deyong; as well as me, the Former Director of the State Administration of Foreign Experts Affairs. I must point out that many members of important ministries in China's central government also attended the forum.

So many high-level participants gave us more excitement than happiness. They are not only knowledgeable but also have extensive academic insights as well as rich practical experiences. Of even more importance, of course, is that many of them have witnessed the happiness and sorrow through the beginning of Sino-U.S cooperation and communication. So, I can say this Forum was a genuine conversation between "eyewitnesses" on each side and the Forum was worthy of its name.

High-quality discussion. Experts on the two sides exchanged ideas and views during two roundtable sessions: "Lessons Learned from the Evolution of Sino-U.S S&T Relations since Normalization of the Sino-U.S Relationship," and "U.S.-China Relations in the Globalized 21st Century". Subtopics included, "Origins and Development of Sino-U.S S&T Cooperation," "Sino-U.S Academic Cooperation: Past, Present and Future," "China and US Comparative Strengths in Science and Technology," "The Direction of Sino-US Cooperation in Industrial Research and Development," "How Does Academic Research Lead to Economic Development."

The experts freely expressed their views about globalization, intellectual property, technology transfer, indigenous innovation, mutual trust, and win-win cooperation. The discussions took place under friendly circumstance and led to many useful insights.

The success of the forum proves that organizing high-level scholarly meetings to discuss S&T cooperation policy before the meeting of the Sino-U.S Joint Commission on Cooperation in Science and Technology is a meaningful measure for both sides. The success of the forum will efficiently facilitate decision-making on important issues by Joint Commission. We hope that we can both use the platform provided by the Forum to promote the further understanding between China and United States

II. Sino-US S&T Cooperation is Evolving Effectively

It has been 27 years since Mr. Deng Xiaoping visited the United States and signed the Sino-US Scientific and Technological Cooperation Agreement with President Carter on

January 31, 1979. In retrospect, we can come to the following conclusions:

During these 27 years, Sino-U.S S&T cooperation has emphasized by leaders of both governments. You may say that this relationship has developed amidst twists and turns in our political and economic relations, but generally it develops well. Eventually it has led to a stable, deep, sustained system of S&T cooperation and communication, which can be characterized as large scale, wide range, and effective. Along with so many successful cases, we can assure ourselves that we have made big strides in S&T cooperation on the basis of equality and reciprocity. In addition to the official S&T cooperation encouraged by both governments, there has also been a great development in S&T cooperation taking the form of semi-official or civil communications.

III. Prospects for Future Cooperation

Based on the experiences gained from Sino-U.S S&T cooperation during the past 27 years, such cooperation feed the needs of people's interests in both countries. We shall keep promoting its development.

China central government has proposed building an innovation-oriented country. The core of this goal is to enhance the capability for indigenous innovation. We shall treat this goal as a national strategy and as a basic point of departure for the adjustment of industrial structure and the transformation of our model of growth. R&D funding will reach 2.5 percent of GDP before 2020. The contribution rate of S&T progress in economic development will be more than 60 percent. Dependence on foreign technology will be reduced to 30 percent. Annual granting of domestic patents for inventions and the number of scientific papers published in leading international peer-reviewed journals will place China among the top five countries in the world.

The US government has proposed the American Competitiveness Initiative. The core objective is to lead the world in innovation. President Bush announced this ambitious plan in the State of the Union Address on January 31, 2006. The plan includes many possible issues which may greatly influence American competitiveness. The two main goals of this plan are: first, make sure that the United States leads the world in basic research; second, make sure the United States leads the world in talent and creativity. In order to ensure that the United States continues leading the world, the government is committed to increase R&D funding continuously. President Bush has proposed that in the coming decade, there will be a newly added $500 billion to support research, and $860 billion in tax incentives for industrial R&D. All this is to maintain America's leading position in science and technology achievements.

China and America both confront a series of challenges. It was frequently observed during the Forum that because of advances in technology, particularly the Internet, more than 6 billion people are living in a global village, sharing the same destiny, happiness and sufferings. In the past, "a bosom friend afar brings a distant land near" was only a poet's romantic idea, while in today's world it is an undisputable truth. Therefore, to realize our respective goals, both sides will have to pay more attention to challenges, including energy sources, natural resources, the environment, disease, health, and terrorism,.

China and America will have to make great efforts in scientific and technical innovation and creativity to respond to these problems, suggesting that international cooperation is quite necessary. Although there is a gap between China and America in their levels of science, technology, and economy, experts believe that there are a large number of areas of potential cooperation and resources to meet these challenges, which create favorable conditions for satisfying mutual interests.

Vice Minister Huang Qitao put forward six suggestions to further develop Sino-US S&T cooperation

1. Initiate strategic research on Sino-U.S S&T cooperation; enhance the top design and the whole plan; look for the new cooperation fields, projects and modes which are in the common interests of both sides; develop and formulate a Sino-U.S cooperation plan with definite goals and evident emphases.

2. Continue to insist on and strengthen the meeting mechanism of the Joint Committee of Sino-U.S S&T; impel the understanding of the S&T development strategies and priority development fields; integrate resources; steer the Sino-U.S S&T cooperation into multi-sided and harmonious development.

3. Drive with great force the keystone fields of S&T cooperation, and assign priority to big cooperation projects, especially to the development of high-tech fields, including energy sources (the reproducible sources and new sources), information technology, biotechnology, nanotechnology, aeronautics, and space, as well as to health, the environment, resources, and other global problems. Meanwhile, I once again call on America to relax the control of high-tech exports to China.

4. Build up a good platform and environment for the Sino-U.S S&T cooperation; encourage scientific communication and mutual visiting. The U.S government should pay attention to and solve as soon as possible the problem of Chinese technicians' visa. Initiate a special plan for Sino-U.S technicians' cooperative training to further strengthen Sino-U.S cooperation in protection of property rights in order to pragmatically and effectively protect those rights.

5. Adopt policy measures to encourage enterprises in both countries, including the medium-small sized enterprises to participate in Sino-U.S S&T cooperation, and support the building of R&D centers to promote the S&T cooperation at the levels of industry and enterprises.

6. Discuss a Chinese S&T Year in the United States to further enhance the friendship underlying Sino-U.S S&T cooperation. By means of exhibitions, meetings, symposia, visiting communication, training, and education we will bring forth recent fruits of China's S&T development to increase the American people's comprehensive understanding to China's S&T and promote China's high-tech enterprises in America. China would also welcome the United States to come to China to hold such activities.

During the Forum, some experts suggested that:

1. In addition to the mechanism of the Sino-U.S Joint Commission on Cooperation in Science and Technology, establish an unofficial communication mechanism to supplement the official coordination mechanism of the Joint Commission

2. Make the Forum regular and institutional, and take it as a platform to establish a Sino-US S&T Policy think tank for communication and cooperation between experts from both sides who would meet at regular intervals. For example, both sides could collaborate on building up a virtual research center for Sino-U.S S&T strategy, participate in meetings at regular intervals, and give full play to an information network and set up on the Internet.

IV. The Basis of Cooperation: Mutual Interest and Mutual Trust

During the opening discussion, experts exhibited great interest in and aired their own views on the topic: what have we learned from the experience and lessons of the 27 year's cooperation of science and technology between China and America? Many statements focused on mutual interest and mutual trust. In other words, mutual tangible benefits and communication enhancement are the fundamental principles of cooperation.

We had to emphasize mutual national interests, since we were discussing international cooperation rather than an aid program. There is a big gap in the science, technology, and economy between China and America, so it is easy to mistake "cooperation" as "aid". Therefore, it is necessary to emphasize cooperation. Namely, this cooperation can be beneficial and healthy only if based on equality and reciprocity.

China is a developing country, and we need aid to make 1.3 billion people live relatively comfortable lives. Personally speaking, I once engaged in the work of accepting international aid, and I know the importance of aid. But aid should be discussed in other conferences; it was not the target of this Forum.

When US President Nixon visited China for the first time, at the airport he said "I come for American interests," while we welcomed his coming for Chinese interests. This common interest promoted the friendly cooperation between China and America. Sino-US cooperation in science and technology is also based on both sides' interests. Consequently, I come to the conclusion that in the past 27 years, China and America were trying for their respective interest to develop under the background of mutual respect.

Mutual trust is also a basis for cooperation. Under the situation of globalization, people always use the information explosion to describe important aspects of their lives. All kinds of information are closely connected with a nation's culture. During the circulation of the information, different countries may have different understandings of the same information, so mistaken ideas cannot escape. For example, during the Forum, lots of speeches focused on the indigenous innovation proposed by China in recent years. As a matter of fact, to understand the meaning of indigenous innovation is to offer the support of the relevant background knowledge, which means that as premise of insisting on the reform and opening policy, we should encourage innovation and creativity. Obviously, it is wrong to take innovation and creativity as anti-foreign activities suggesting exclusiveness.

In another view, people are always used to propagandizing what they think right, so it is no wonder that some things become distorted. For this reason, communication to come to a clearer understanding is very important.

Intellectual property protection was also an often discussed topic at the Forum. Sometimes, foreign propaganda on China's indifference to the protection of intellectual property is reasonable, but it is only partly true. I don't know whether all of you here at the JCM know about our efforts on the protection of intellectual property.

Many reports on China's efforts on the protection of intellectual property can be found in China's media such as television and newspapers. For instance, annual activities such as destroying pirated copies are held among many cities in China such as Beijing, Shanghai, and Guangzhou, which are transmitted by live broadcasting. By means of it, the public can become aware of the importance of respecting and protecting intellectual property.

Respecting and protecting intellectual property also feeds the needs of the Chinese people. Due to the encouragement of the government, Chinese people now also have lots of domestic intellectual property. They not only vigorously support the protection of intellectual property domestically, but also carry out judicial activities such as protecting intellectual property at the international level.

All measures I have mentioned above don't aim to defend our past behavior. However, I'd like to bring more understanding to the outside world about the price we have had to pay to protect intellectual property. Idealism was very popular in a relatively long period since the 1950s, which was opposed to knowledge privatization and considered that knowledge shall be shared freely by everyone. It was rather disgraceful to hide one's own knowledge from society and there was no such thing as intellectual property. So, there are so much social issues to be dealt with when nowadays we put emphasis on the protection of intellectual property.

Finally, I have to mention is that many people at home and abroad made great efforts on the preparations for the Forum. And the Forum could not have been successfully held without their help. I shall present to the Joint Commission my acknowledgements to those who listed below:

J. Thomas Ratchford, William Blanpied, Soo Jung Shin, **George Mason University**

Jin Ju, **China's Science and Technology Counselor in Washington, DC, and advisor to the United States Government**

Li Xin, **International Cooperation Department of China's Ministry of Science and Technology**, Zhou Yuan (Deputy Director), Zhao Gang, Chang Yufeng, Chen Weihua, He Qiong, Lin Yuanyuan, **National Research Center for Science and Technology for Development**

Liu Xiaohong, **Xin Shengye Company**

Thanks you!

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October 19, 2006
Intercontinental Hotel
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J. Thomas Ratchford
Distinguished Visiting Professor
Director, Science and Trade Policy Program
George Mason University School of Law

Thank you, Dr. Marburger and distinguished members of the Joint Commission.

I am pleased and honored to join Mr. MA Junru, former Director General of State Administration of Foreign Experts Affairs of China (SAFEA) in making this report on the China-U.S. Forum on Science and Technology Policy.

I am the Director of the Science and Trade Policy Program at the George Mason University (GMU) Law School. A major activity of ours is the China Science and Technology (S&T) Policy Program. Please do not let my title fool you. I began my professional life as a physics professor and still consider myself a scientist.

We in the Science and Trade Policy Program have been engaged in a cooperative effort with our Chinese colleagues since 1999 to explore S&T policy issues relevant to the important China-U.S. bilateral relationship. The U.S. National Science Foundation (NSF), the National Natural Science Foundation of China (NSFC) and the Ministry of Science and Technology (MOST) in China have been major sponsors of this effort.

Topics have ranged from Engineering Education to Emerging and Re-emerging Infectious diseases.

A common thread has been the examination of relevant policy in the context of the science surrounding a specific topic. This effort has generated a substantial body of documentation, including a lot of material posted on the web. Our web site, we have been told, has been quite useful to researchers and policy makers alike. We hope to increase the utility of the site in the future.

Forum Venue and Delegations

The Forum was held at the Beijing Xiyuan Hotel from Sunday evening through Tuesday evening (October 15-17, 2006). The MOST did a superb job of hosting the Forum. As Mr. MA noted in his closing summary, there were 120 Chinese and 50 American participants.

Both sides had very distinguished delegations. For example on our side there were former Presidential Science Advisors, former NSF Directors, current and former university presidents, leaders from industry and the entrepreneurial community, current government science officials, and leading scholars on China S&T.

Young Scholars

At the same time there were extremely competent and bright young scholars as participants. The U.S. cadre was led by six young scholars selected in a very competitive national competition. Supported by NSF and the Motorola Foundation they received grants that permitted them to visit institutions and carry out studies in China, in addition to participating in the Forum.

Forum Objectives

The major objective of the Forum (and the prior activities in this initiative since 1999) was to be useful to decision makers, scholars and others (including the interested public) in both countries. This, of course, includes the United States (U.S.)-People's Republic of China (PRC) Joint Commission on Scientific and Technological Cooperation (JCM). The list of objectives was captured nicely by Mr. ZHOU Yuan, Deputy Director-General of the National Center for Science and Technology for Development, at the beginning of the Forum. Objectives, he noted, included:

- Explore issues important to the future China-U.S. bilateral relationship
- Be useful to policy makers and decision makers in both countries, including the 2006 (12th) China-U.S. Joint Commission Meeting (JCM)
- Generate a baseline of knowledge relating to the U.S.-China S&T policy relationship through commissioned background papers
- Involve outstanding leaders in the Forum with knowledge, experience and wisdom who will examine issues and synthesize useful ideas and conclusions for better dealing with bilateral S&T policy challenges
- Provide a structure (described below) to participants to examine and discuss issues and ideas
- Insure participation of outstanding individuals with relevant experience in academia, government and industry
- Enhance the understanding of relevant intellectual and practical information and data through careful selection of paper authors and speakers

- Provide opportunities for young scholars to learn and to participate in dialogue with senior participants, with the possibility of attracting young talented scholars into areas related to some of the bilateral policy issues examined at the Forum
- Document the background papers, presentations, discussions and conclusions through print and electronic media
- Disseminate the printed and electronic record of the Forum to decision makers and the general public in both countries through a variety of means

Let me emphasize the last item, being useful to the general public. We will make a special effort on our side to disseminate information on the U.S-China S&T relationship and the Forum broadly to individuals and institutions of all types.

Forum Highlights

It would be impossible to capture the results of the Forum in the few minutes we have before the JCM this morning. They will be thoroughly documented in the proceedings, and especially in the Executive Summary, that we plan to produce and make available in a few weeks. But let me try to give you a flavor of what is to come.

As noted by Mr. MA, two Roundtables were the centerpieces of the Forum. They were on the topics of:

- I. Learned during the Evolution of China-U.S. Relations Since Normalization, and
- II. U.S.-China Relations in the Globalized 21st Century

Excellent background papers were prepared and distributed to all participants before the Forum. I wish there were time to go into their content since some likely will become standard references on this topic. They are clearly among the most valuable outputs of the Forum.

Three types of institutions were examined by the Forum as to their roles in S&T policy-making and execution. They were:

- Industry
- Government
- Universities

Here are some examples:

Industry: globalization, best R&D practices, IPR, and university relationships.

Government: distribution of funding by fields and institutions, role of governments in international R&D (contrasting megaprojects and individual investigators), setting priorities (such as energy R&D).

Universities: roles of university centers and "key laboratories," relationship to mission agency objectives, role of universities in commercialization.

This last item generated a lot of lively discussion; I'll be happy to expand upon it with members of the JCM if there are questions.

The recently promulgated Medium and Long Term S&T Plan for China came in for a lot of attention. In particular the term "indigenous innovation" was examined closely. Though there was no complete agreement as to its meaning, there was agreement that the key to the usefulness (and the funding) of R&D in the future hinges on the innovation that results from it. Hence the importance of a supportive and realistic policy framework for research and innovation was emphasized.

Issues Addressed by the Forum

Several core issues dividing our two countries were identified by participants. Although there was no real agreement on the number or the specifics of these core issues, the full report will attempt to lay out a descriptive format for them.

These so-called core issues included lack of parity, differing constituencies, differences in funding classifications and patterns, and differing approaches to international cooperation.

The need for improved policies, institutions and programs related to S&T cooperation were a recurring theme. Multilateral and bilateral approaches were contrasted. In this context the suggestion was made that China should develop a major initiative related to a large, basic science megaproject.

Another interesting question raised was whether, with the passage of time, there is still a need for a joint commission (JCM). Some said the JCM was outmoded and a more diverse and flexible official system was needed, supplemented by various non-governmental forums. But most agreed the JCM was a necessity, or at least still useful, in the short term.

As Mr. MA noted, many did believe there was a need to supplement the JCM to provide avenues for increased, less structured contacts between government agencies, companies, trade associations and universities to tackle the many thorny issues confronting them.

Some of the important issues examined included:

- Intellectual Property Rights (IPR)
- Visas
- Deemed exports
- Health and environmental cooperation
- Standards
- Number of universities with formal cooperation

- Defense research concerns

Conclusions

I wish there were enough time to engage in a meaningful discussion on the many important and exciting issues we face in the bilateral S&T relationship. But I hope these brief comments have given you a flavor of the kinds of ideas being considered by many of the brightest and most knowledgeable people in our two countries.

Your suggestions as to possible ways to supplement the official government-to-government relationship would be especially welcome. In the meantime, we shall prepare the Forum results for publication and see that you all receive copies.

We also hope to make these results available, in a variety of forms, for wide dissemination to policy-makers scholars and the public. Your ideas as to how that might best be done would be greatly valued.

In closing, let me note that it is almost certain that better policies will result from better understanding, even if that understanding is incomplete. We hope the results of this Forum will contribute to that better understanding.

Thank you.