

**China-U.S. Relations: Trade Diplomacy, and Research**  
**November 14-17, 2005**  
**Beijing, China**

**Research Roundtable Summary**

Session Title: **Information Technology and Applications**

Co-Chairs (name and affiliation):

- U.S.: Dr. Wei Zhao, Director of Computer and Network Systems Division, National Science Foundation, USA
- Chinese: Dr. Zhiyong Liu, Deputy Director of Computer and Information Sciences Directorate, National Science Foundation of China

**Other Collaborators:**

**General Sessions:**

Dr. Guojie Li, Chinese Academy of Sciences; Dr. Yinghua Min, Chinese Academy of Sciences; Dr. Craig C. Douglas, University of Kentucky; and, Yale University; Dr. Weiping Shi, Texas A&M University; Dr. Dian Zhou, Fudan University; Dr. Xiaoming Li, Peking University; Dr. Bjarne Stroustrup, Texas A&M University; Dr. Dingzhu Du, University of Texas at Dallas; Dr. Hui Zhang, Carnegie Mellon University; Dr. Kai Li, Professor, Princeton University; Dr. Larry Landweber, Professor University of Wisconsin; Dr. Ravishankar Iyer, University of Illinois at Urbana-Champaign; Dr. Sangtae Kim, Purdue University; Dr. Christophe Diot, Thomson Paris Research Laboratory; Dr. Hai Jin, Central China University of Science and Technology; Dr. Ke Liu, National Science Foundation of China; Ms. Patti E. Urbina, Texas A&M University

**Special Session on New Media and Cultural Power**

Chair: Dr. Ian Weber, Texas A&M University; Dr. Ke Guo, Shanghai International Studies University; Dr. Randolph Kluver, Nanyang Technological University, Singapore; Dr. Duan Peng, China Communications University

**Special Session on IT-based Science Education**

Chair: Dr. X. Ben Wu, Texas A&M University; Dr. Ke Guo, Shanghai International Studies University  
Xiaolin Zhang, China Association for Science and Technology; Stephanie Knight, Texas A&M University; Jianhui Li, CAS, China Network and Information Center; Wen Li, CAS, China Network and Information Center; Yu Chen, CAS, China Network and Information Center

**Session Summary:**

This Research Roundtable explored critical subjects related to the challenges and opportunities of Information Technology and Applications and provided scientists from both countries the opportunity to strengthen the exchange in this critical field and promoted substantial cooperation. Computer and computational science and technology provide the practical tools indispensable to further scientific advances in an expanding range of disciplines. On occasion, such applications are so far reaching that their impacts go beyond practical economic impacts and have political, social and cultural impacts as well. The developments of computer and computational sciences and technologies have resulted in significant changes in the ways that scientific research is conducted. They have facilitated new kinds of scientific collaboration allowing scientists located in areas remote from leading research centers to have immediate access to research results, and in many cases to participate directly in the research itself. Computer and computational sciences and technologies are also continuing to have broad economic,

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political, social and cultural impacts which are now being subject to critical examination. Although, arguably, most of these broader impacts have been positive, negative aspects (both actual and perceived) have also been identified. Understanding and dealing with such negative aspects, preferably at an international level, will be essential if computer and computational sciences and technology are to have their potential capabilities fully realized. These capabilities will serve as tools for conducting scientific research, as facilitators of scientific cooperation, and, most importantly, as a means for effecting positive economic and social change by enhancing communications within and among societies throughout the world. The United States has been a leader in the field of the computer and computational sciences and technology. China, on the other hand, has recently made rapid progress in many critical aspects of this field and seeks to continue this progression. Hence, productive collaborations will benefit both countries and make a positive impact on the community.

This session on Cyber Infrastructures and Computer and Network Systems was held with parallel sessions simultaneously investigating the role of IT, New Media and Cultural Power; and, IT-based Science Education. The combined sessions hosted two members of the US Academy of Engineering; the Deputy Director of Computer and Information Technology, NSF/China; the Editor in Chief of IEEE Transactions; and two NSF/US Division Directors. IT and applications discussions included; grid applications; algorithms and numerical and symbolic methods; computer network and security; embedded systems; dynamic data-driven simulation; modeling techniques/tools for geo-sciences and petroleum engineering; workforce training; and ethics issues.

IT, New Media and Cultural Power focused on how new media creates a framework for discourse around one of the thorniest of issues in international politics, that of China-US relations. Secondly, the roundtable investigated how the logic (or organization of information) of these new media establishes a political culture in which issues of foreign policy between the nations are worked out. Thirdly, the roundtable explored how new media technologies in current and future digital forms, contribute to public deliberation of international relations. For example, the growing convergence between the Internet and digital television provide a potentially dynamic content and technology rich research environment in which to investigate these issues. New media technologies serve as a platform for multiple research themes developed through the roundtable. A panel of international scholars comprised of US and China experts worked together on blended panels for the discussions which included media ecologists, political scientists, humanities scholars, technology experts, and media analysts and professionals active in new media developments, international communication and international relations. Questions framing the discussion were:

1. How and in what ways do new media differentially portray US-Chinese foreign policy issues?
2. How does the logic of new media encourage or inhibit serious discussion of foreign affairs? What assumptions are made about format, timeliness and perspective?
3. How can new media create a political culture in which issues of China-US foreign policy are discussed within the public sphere?
4. How can new media contribute to political discourse and public deliberation of foreign affairs in ways that improve China-US relations?

IT-based Science Education shared information on existing collaborations with the Chinese Academy of Science, various Chinese museums and Texas A&M University. A primary benefit of this collaboration has been the heightened awareness of the benefit of IT based work in science education. Lessons learned in the project are anticipated to serve as a model to move technology in science education from a role of demonstration and public awareness to the introduction of more inquiry-based and experiential learning-based education to the classroom in high schools and other levels of formal education.

#### **Findings/Recommendations:**

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The roundtable participants, collectively and individually, agreed the event provided great benefit in allowing an open exchange, promoting relationships and dialogue and offering a venue that will build and strengthen future relations among the participating scholars. Organizers found the forum to be useful for academics to better understand and consider the role and comprehensiveness of IT in a variety of applications. Recommendations for future roundtables centered on the need to attract greater numbers of Chinese scholars to the discussion and thereby expand the Chinese perspective's representation in the dialogue. Particularly relating to IT applications and IT research, the need to more evenly match the participants' interest and expertise would enhance the discussion.

#### **Future Collaborations and Justification:**

Both governments have given full attention to mobilizing the Internet and digital broadcasting for international distribution of information. However, little is known of the impact of the logic of these new media on international relations. In the critical realm of US relations, scholars who are concerned about political discourse must look beyond the premature promises found within utopian dreams that new media will bring a "computer-mediated peace". As such, there is need to gain more accurate understandings of how new media technologies mediate political discourse and international relations, so that future hopes of improved China-US relations are not based on technological fantasy. The international significance of these research findings, coupled with the common interest in improving international relations for mutual economic gain, provides fertile ground for research into the role of new media technologies in enhancing China-US relations.

Participants of the IT, New Media and Cultural Power are pursuing publication of their roundtable presentations. Increased exposure from the publication is hoped to aid recruiting to attract more Chinese and US scholars to future discussions.

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