

MEDIA RELEASE

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INTERNATIONAL EXPERTS CONVENE IN SINGAPORE TO DISCUSS THE VALUE OF BIG DATA

- ***30 international experts gather for workshop organized jointly by the US Board on Global Science and Technology and Singapore's Agency for Science, Technology and Research***

Singapore, 3 March 2011 – 30 scientific experts representing Asia, the Americas, and Europe convened at the Institute for Infocomm Research (I²R), a research institute of the Agency for Science, Technology and Research (A*STAR), for a workshop co-organized with the US Board on Global Science and Technology (BGST). Held at Fusionopolis@One North from 28 February to 3 March 2011, the workshop was on 'Realizing the Value from Big Data'.

BGST is a new venture set up by the US National Academies to study and recommend how US science and technology can leverage a global network of scientists to promote greater collaboration across international borders. BGST is coordinating an international program of workshops, and is also developing a global community to build collaboration across borders to look at common issues that need to be addressed collectively.

The intention is to continue with experts' meetings in different international locations, to engage workshop participants to build and continue relationships and use the website to create an ongoing international dialogue.

This workshop in Singapore is the second of such workshops organized by BGST. Some participants from the Singapore meeting will form part of a core group that will help to plan and attend subsequent meetings.

Prof Lye Kin Mun, Executive Director, I²R commented: *"It was a tremendous opportunity to co-organize, with the Board on Global Science and Technology of the US National Academies, this workshop in Asia for the very first time. Big Data represents a new paradigm in scientific discovery and we are very excited by the important new ideas arising from the discussions amongst these international multidisciplinary scientific experts. I²R will be studying, very deeply, how these new ideas may be pursued for potential economic impact to Singapore. We look forward to other opportunities of working closely with BGST."*

`Big data' refers to the tools, processes and procedures allowing an organization to create, manipulate, and manage very large data sets and related storage facilities. This could mean terabytes, petabytes or even larger collections of data.

The rapid increase in computational power, coupled with a steady expansion in memory capacity, over the past few decades emphasize the opportunities available in the exploration and exploitation of big data. While diverse fields such as astrophysics and bioinformatics have made incredible progress in exploitation of big data, significant barriers that are both technological and cultural remain - and many of those barriers span both scientific disciplines and application domains. Thus, the central goal of this workshop series was to identify and prioritize common barriers that require collaborative solutions, and to create a roadmap to facilitate resolution.

This workshop in Singapore brought together bioinformatics scientists and environmental scientists with computational/data scientists to assess and project the impact of complex datasets around the themes of Volume, Variety, Velocity, and Veracity.

About 50 participants, comprising 30 scientific experts from Asia, the Americas, and Europe, plus BGST members and senior I²R researchers participated in this workshop. The workshop was led by the BGST Chair Dr. Ruth David, CEO and President of Analytic Services Inc. Other BGST Board members in Singapore include Dr. Jeffrey Bradshaw of the Florida Institute for Human and Machine Cognition; Dr. Dianne Chong of Boeing; Dr. Peter Kolchinsky of RA Capital; and Dr. Bernard Meyerson of IBM (who serves also on I²R's Scientific Advisory Board).

BGST Chair, Dr. Ruth David said, "*Full realization of the potential value of Big Data will require solutions that span disciplinary boundaries and extend across geographic borders. The goal of BGST is to foster an international collaboration to accelerate development and sharing of such solutions, thus enabling the work of individual researchers around the world as we collectively tackle major global challenges.*"

Prominent experts at the workshop include Dr. Paul P. Maglio of IBM Research, Dr. Yong Ge of the Chinese Academy of Sciences and Dr. Keiko Takahashi of the Japan Agency for Marine-Earth Science and Technology. (See Annex A for profiles of these experts) One Singapore expert participating in the workshop is Dr. Frank Eisenhaber, Executive Director of A*STAR's Bioinformatics Institute (BII).

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encl. Annex A

About the Board on Global Science and Technology

The Board on Global Science and Technology (BGST) was established in 2009 to build a global community of interest among scientists, engineers, medical and health researchers, and entrepreneurs who are engaged in the research and development of emerging technologies. The purpose of this global network is to enhance transparency with regard to international scientific and technological advances, to identify impediments to technological development and application that require collaborative resolution, and to foster the development of international norms for the governance of emerging technologies. BGST is coordinating an international program of workshops, and is also developing a global community by means of a professional networking website that rapidly disseminates information resulting from the workshops, and sustains interactive engagement within the scientific and technical communities.

The opportunities and challenges of "data-intensive" science is the organizing theme for BGST's international and US-based workshops in 2010-2011. The first workshop, co-sponsored with Microsoft, took place in August 2010. Participants discussed data challenges associated with the development of the Smart Energy Grid.

BGST is sponsored by Defense Research & Engineering (within the Office of the U.S. Secretary of Defense/DoD). BGST is a joint project of the Policy and Global Affairs Division and the Division on Engineering and Physical Sciences (DEPS) of the National Research Council, the operating arm of the U.S. National Academy of Sciences.

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About Institute for Infocomm Research

The Institute for Infocomm Research (I²R - pronounced as i-squared-r) is a member of the Agency for Science, Technology and Research (A*STAR) family. Established in 2002, our mission is to be the globally preferred source of innovations in 'Interactive Secured Information, Content and Services Anytime Anywhere' through research by passionate people dedicated to Singapore's economic success.

I²R performs R&D in information, communications and media (ICM) to develop holistic solutions across the ICM value chain. Our research capabilities are in information technology and science, wireless and optical communications, and interactive digital media.

We seek to be the infocomm and media value creator that keeps Singapore ahead.
Website: www.i2r.a-star.edu.sg

About the Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is the lead agency for fostering world-class scientific research and talent for a vibrant knowledge-based and innovation-driven Singapore. A*STAR oversees 14 biomedical sciences, and physical sciences and engineering research institutes, and nine consortia & centre, which are located in Biopolis and Fusionopolis, as well as their immediate vicinity.

A*STAR supports Singapore's key economic clusters by providing intellectual, human and industrial capital to its partners in industry. It also supports extramural research in the universities, hospitals, research centres, and with other local and international partners.

For more information about A*STAR, please visit www.a-star.edu.sg

ANNEX A

1. **Paul P. Maglio** is a research scientist and manager at the IBM Research - Almaden in San Jose, California. He is currently working on a system to compose loosely coupled heterogeneous models and simulations to inform health and health policy decisions. Since joining IBM Research, he has worked on programmable Web intermediaries, attentive user interfaces, multimodal human-computer interaction, human aspects of autonomic computing, and service science. He holds thirteen patents and has published more than 90 scientific papers in various areas of computer science, cognitive science, and service science. He is also editor of the recently published Handbook of Service Science. He holds a bachelor's degree in computer science and engineering from MIT and a Ph.D. in cognitive science from the University of California at San Diego, and he is currently an Associate Adjunct Professor at UC Merced, where he teaches cognitive science and service science.
2. **Yong Ge** received the B.Eng. degree in surveying and mapping and the M.Eng. degree in geographical information system from Wuhan University, Wuhan, China, in 1995 and 1998, respectively, and the Ph.D. degree in cartography and geographical information system from the Chinese Academy of Sciences, Beijing, China, in 2001. She is an Associate Professor with the State Key Laboratory of Resources and Environmental Information System, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences. Her research activity focuses on spatial data analysis and data quality assessment. She has published over 40 scientific papers in refereed journals. She is a member of the Model and Method Division, Geographical Information Society in China.
3. **Keiko Takahashi** is Group Leader, Earth Simulator Center, Japan Agency for Marine-Earth Science and Technology. She obtained her B.S in Complex Function Theory at the Department of Mathematics of Tsuda College in 1985; Master of System Science in 1987 and her Ph.D. in System Science in 1991, both from the Interdisciplinary Graduate School of Science and Technology at Tokyo Institute of Technology. Her research activities include Computational Fluid Dynamics, Formal Method Theory, Concurrent/Parallel Computational Algorithms, Complexity Theory, Parallel Computing Architecture, Genetic Algorithms, Complexity Theory Oceanic Modeling, Atmosphere Modeling, Coupled Ocean-Atmosphere Modeling, High Performance Computing Coupled Ocean-Atmosphere-Sea Ice Modeling, High Performance Computing Multi-scale multi-physics simulations of weather/climate.