Conference on Comparing High Performance Computing in the U.S. and China

April 29 – 30, 2014
San Diego Supercomputer Center Auditorium
University of California, San Diego
La Jolla, California

Monday, April 28
7:00pm
Welcome Dinner at Torreyana Grille

Tuesday, April 29
7:45am
Shuttle Departs from Hilton Torrey Pines to San Diego Supercomputer Center
8:00am
Breakfast available
8:30am
Welcome and Introduction

Tai Ming CHEUNG, University of California – San Diego
David MEYER, University of California – San Diego
Dona CRAWFORD, Lawrence Livermore National Laboratory

8:45 – 9:45am
What Does it Take to Become a Supercomputing Superpower?

Discussants: Jack DONGARRA, University of Tennessee
David KAHANER, Asia Technology Information Program
Moderator: David MEYER, University of California – San Diego

Frameworks of Analysis for Understanding HPC Development in China
Tai Ming CHEUNG, University of California – San Diego

Overview of Supercomputing
Dona CRAWFORD, Lawrence Livermore National Laboratory

9:45 – 10:00am
Break
10:00 - 11:30am  Lessons from the U.S. and Other Major Countries: Part 1

Discussants: William HARROD, Department of Energy
ZHANG Yunquan, Chinese Academy of Sciences

Moderator: Jack DONGARRA, University of Tennessee

The American HPC System: Policy, Institutions, Applications
Robert NEELY, Lawrence Livermore National Laboratory

The American Response to Japanese Competition in the 1980s and to China in the 21st Century
Kevin WALSH, University of California – San Diego

11:30 – 11:45am  Break

11:45 – 1:00pm  Lessons from the U.S. and Other Major Countries: Part 2

Discussant: David KAHANER, Asia Technology Information Program
Bob MEISNER, National Nuclear Science Administration

Moderator: Jon LINDSAY, University of California – San Diego

HPC in Japan
Jun MAKINO, Tokyo Institute of Technology

HPC in Europe
Peter BECKMAN, Argonne National Laboratory

1:00 – 2:00pm  Lunch

2:00 – 3:30pm  China’s Emergence as a Supercomputing Superpower

Discussants: Yifeng CUI, San Diego Supercomputer Center
Tai Ming CHEUNG, University of California – San Diego

Moderator: Peter BECKMAN, Argonne National Laboratory

The Developmental History and Trajectory of Chinese Supercomputing
TIAN Rong, Chinese Academy of Sciences
(presented by Yunquan ZHANG)

History of the Development of Tianhe-1 and Tianhe-2
PENG Chunli, National University of Defense Technology
QIAO Yuting, National University of Defense Technology

3:30 – 3:45pm  Break
3:45 – 5:30pm  **Mapping the Chinese Supercomputing Eco-System**

**Discussants:**  *Dona CRAWFORD, Lawrence Livermore National Lab*  
*Jack DONGARRA, University of Tennessee*

**Moderator:**  *Tai Ming CHEUNG, University of California – San Diego*

Mapping the Governance of China’s National HPC System: Institutions, State Policies, and Funding Mechanisms  
*Brian TSAY, University of California – San Diego*

Mapping the Political Economy of China’s National HPC System: Actors, Products, and Applications  
*Jordan WILSON, University of California – San Diego*

China’s Programs for HPC Development: The Role of 863, 973, National Natural Science Foundation, Medium and Long-Term Science and Technology Development Plan, and other Government Programs and Prospects Over the Next Decade  
*QIAN Depei, Beijing University of Aeronautics and Astronautics*

5:30pm  **Adjourn**

5:30pm  **Shuttle Departs to Dinner from the San Diego Supercomputer Center**

6:00pm  **Dinner- Piatti Italian Restaurant**

**Wednesday, April 30**

7:45am  **Shuttle Departs from Hilton Torrey Pines to San Diego Supercomputer Center**

8:00 – 8:30am  **Breakfast available**

8:30 – 10:30am  **Chinese Supercomputing Expertise**

**Discussants:**  *William TANG, Princeton Plasma Physics Laboratory*  
*Jeffrey NICHOLS, Oak Ridge National Laboratory*

**Moderator:**  *QIAN Depei, Beijing University of Aeronautics and Astronautics*

Patterns of Development and Key Trends in Chinese HPC Evolution: Insights From the China Top 100 HPC List  
*ZHANG Yunquan, Chinese Academy of Sciences*

Chinese Scientific Publishing in HPC and Understanding Expert Networks  
*David MEYER, University of California – San Diego*  
*Eric ANDERSON, University of California – San Diego*  
*Song DONGJIN, University of California – San Diego*
Becky Xuliang MIAO, University of California – San Diego

HPC Research and Development in China: Key Institutions, Technical Progress, Human Capital
David KAHANER, Asia Technology Information Program

10:30 – 10:45am  Break

10:45 – 12:45pm  Regional Patterns of Supercomputing Development in China and the U.S.

Discussants: Robert NEELY, Lawrence Livermore National Laboratory
Jun MAKINO, Tokyo Institute of Technology
Moderator: David KAHANER, Asia Technology Information Program

Supercomputing in Shanghai
WANG Tao, Shanghai Supercomputing Center

Academic Supercomputing in the US: Extending the Impact of HPC
Richard MOORE, San Diego Supercomputer Center

Scientific Applications of HPC
Yifeng CUI, San Diego Supercomputer Center
William TANG, Princeton Plasma Physics Laboratory

12:45 – 1:45pm  Lunch

1:45 – 3:30pm  Future Trends

Discussants: Dona CRAWFORD, Lawrence Livermore National Lab
QIAN Depei, Beijing University of Aeronautics and Astronautics
Moderator: Jun MAKINO, Tokyo Institute of Technology

The Future HPC Ecosystem
Anne FITZPATRICK, Virginia Polytechnic Institute and State University

Towards Exascale: HPC Challenges and Opportunities
Jack DONGARRA, University of Tennessee

Long-Term Trends
Jeffery NICHOLS, Oak Ridge National Laboratory

3:30 – 3:45pm  Closing Remarks

3:45 – 4:30pm  San Diego Supercomputer Center Tour

4:30pm  Shuttle Departs San Diego Supercomputer Center to the Hilton Torrey Pines