



Chinese Academy of Engineering (CAE)
U.S. National Academy of Engineering (NAE)
Royal Academy of Engineering (RAEng)

Global Grand Challenges Summit

Tackling Global Challenges and Creating a Better Future

BEIJING, SEPTEMBER 15-16, 2015

PROGRAM

Tuesday, September 15

- 8.40am Participants sign-in
- 9.00am OPENING CEREMONY & PLENARY ADDRESSES**
Chair: *ZHOU Ji, President of CAE*
- 9.04am *Address by NAE leadership*
- 9.08am *Address by RAE leadership*
- 9.12am *Address by US Ambassador*
- 9.16am *Address by UK Minister Counsellor*
- 9.20am PLENARY ADDRESSES**
- 9.20am *Jack Ma, Chairman of Alibaba*
- 9.40am *Charles O. Holliday, Chairman of NAE, Chairman of Royal Dutch Shell*
- 10.00am *Andrew Chan FREng, Chairman of Arup Group Trusts*
- 10.20am Break
- 10.40am Short inspirational video clip
- 10.45am SESSION 1: SUSTAINABILITY**
Chair: *CHEN Jining, Minister of the Ministry of Environmental Protection of China*
- 11.00am Same Challenges with Bigger Answers or a Different Question
Keith Clarke CBE, Chair, Tidal Lagoon Swansea Bay plc
Vice President, Institute of Civil Engineers
- 11.15am Fitting on the Earth: Grand Challenges to Preserve the Habitability of the Planet
Robert Socolow, Co-Director, the Carbon Mitigation Initiative;
Director, Climate and Energy Challenge, Princeton
Environmental Institute
- 11.30am Sustainable Management of Urban Water Resources
QIAN Yi, CAE Member

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- 11.45am 30-minute moderated discussion/response to audience questions
12.15pm Lunch
- 1.30pm Short inspirational video clip
1.35pm **SESSION 2: RESTORE AND IMPROVE URBAN INFRASTRUCTURE**
Chair: *XU Kuangdi, Honorary Chairman of the Governing Board of CAE, CAE Member*
- 1.50pm China's Urban Infrastructure Challenges
PAN Yunhe, CAE Member
- 2.05pm Restore and Improve Urban Infrastructure
Dervilla Mitchell CBE FREng, Director of Arup
- 2.20pm Architecture Unplugged
Doris Sung, Principal DOSU Studio Architecture
- 2.35pm 30-minute moderated discussion/response to audience questions
3.05pm Break
- 3.25pm Short inspirational video clip
3.30pm **SESSION 3: HEALTH**
Chair: *Roderic Pettigrew, Director of the National Institute of Biomedical Imaging and Bioengineering, US National Institutes of Health*
- 3.45pm Informatics: the Frontier of Innovation in Health and Healthcare
Molly Coye, Chief Innovation Officer of the UCLA Health System
- 4.00pm From Wearables to Smart Implants – Towards Pervasive and Personalised Healthcare
Guang-Zhong Yang, Director of the Hamlyn Centre at Imperial College
- 4.15pm Health in the Aging World-What Should We Do?
WEN Yumei, CAE Member
- 4.30pm 30-minute moderated discussion/response to audience questions
- 6.00pm-8.00pm** **Gala Reception & Dinner** (East Dining Hall, BCC)
Chair: *FAN Daiming, Vice President of CAE*
- 6.00pm-6.05pm Remarks by ZHOU Ji, President of CAE
6.05pm-6.10pm Remarks by WANG Yupu, Chairman of Sinopec Group
6.10pm-6.15pm Remarks by Keoki Jackson, CTO of Lockheed Martin

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- 6.40pm-7.00pm Student Day Event Awarding Ceremony
(Chair: *Yannis Yortsos, Dean of the USC Viterbi School of Engineering*)
- 8.00pm End of reception

Wednesday, September 16

- 8.30am Short inspirational video clip
- 8.35am SESSION 4: JOY OF LIVING**
Chair: *Wayne Clough, President Emeritus, Georgia Institute of Technology;
Former Secretary, Smithsonian Institution*
- 8.50am **XXXXXXXXXX**
*Will.i.am, global music artist (front man for The Black Eyed Peas),
entrepreneur and philanthropist*
- 9.05am How to Combine the Old TCM Practice with Modern Technologies to Improve
the Quality of Our Life?
CHENG Jing, CAE Member
- 9.20am The Potential of Consumer Virtual Reality
Jack Cohen, RAEng Enterprise Fellow, University of Warwick
- 9.35am 30-minute moderated discussion/response to audience questions
- 10.05am Break
- 10.25am Short inspirational video clip
- 10.30am SESSION 5: ENERGY**
Chair: *FU Chengyu, former Chairman of Sinopec Group*
- 10.45am A New Industrial Revolution for a Sustainable Energy Future
Arun Majumdar, Professor, Stanford University
- 11.00am **XXXXXXXXXX**
Alastair Borthwick RAEng, the Institute of Energy Systems in Edinburgh
- 11.15am The Reliability of Comprehensive Energy
XUE Yusheng, CAE Member
- 11.30am 30-minute moderated discussion/response to audience questions
- 12.00pm Lunch
- 1.30pm Short inspirational video clip

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1.35pm SESSION 6: EDUCATION

Chair: *Richard Miller, President of Olin College*

- 1.50pm For a Better Future: China's Engineer and Engineering Education
WU Qidi, former Vice Minister of the Ministry of Education of China
- 2.05pm Our Greatest Grand Challenge: Preparing the Next Generation for the Future
Dean Kamen, Founder & President of DEKA Research & Development Corporation
- 2.20pm The Beginnings of Wisdom: Challenges in Engineering Education
Helen Atkinson, Head of the Department of Engineering, University of Leicester
- 2.35pm 30-minute moderated panel discussion/response to audience questions
- 3.05pm Break

3.25pm Short inspirational video clip

3.30pm SESSION 7: SECURITY AND RESILIENCE

Chair: *Keoki Jackson, Chief Technology Officer, Lockheed Martin*

- 3.45pm IoT Security
*Maire O'Neill, Director of Research for Data Security Systems at the
Centre for Secure Information Technologies (CSIT), Queen's
University Belfast*
- 4.00pm Climate Intervention: Possible Impacts on Global Security and Resilience
Marcia McNutt, AAAS, Editor of Science magazine, Geophysicist
- 4.15pm Respond to Global Changes as a Community of Common Destiny
DU Xiangwan, CAE Member
- 4.30pm 30-minute moderated discussion/response to audience questions
- Chair: *FAN Daiming, Vice President of CAE*
- 5.00pm Student Day competition report
Chair: *Yannis Yortsos, Dean of the USC Viterbi School of Engineering*
- 5.25pm Closing remarks
ZHOU Ji, President of CAE
- 5.30pm Summit adjourns