

# STS *forum*

Science and Technology in Society *forum*

# 2019

## The 16<sup>th</sup> ANNUAL MEETING

October 6, 7 and 8, 2019 Kyoto, Japan



**Hiroaki Nakanishi**  
Chairman  
Keidanren (Japan Business Federation)  
JAPAN



**Koji Omi**  
Founder and Chairman  
STS *forum*  
JAPAN



**Shinzo Abe**  
Prime Minister  
Government of Japan  
JAPAN



**Marcia McNutt**  
President  
National Academy of Sciences  
USA



**Charles O. Holliday, Jr.**  
Chairman  
Royal Dutch Shell plc  
USA



**Ada E. Yonath**  
Professor  
Weizmann Institute of Science  
ISRAEL  
[2009 Nobel laureate in Chemistry]

# Message from the Chairman



**Koji Omi**  
Founder and Chairman  
*STS forum*

*STS forum*, Science and Technology in Society *forum*, was founded in 2004 by Koji Omi, a former Minister of Finance and former Minister of State for Science and Technology Policy and for Okinawa and Northern Territories Affairs in the Japanese government. *STS forum* aims to provide a new mechanism for open discussions on an informal basis and to build a human network that would, in time, resolve the new challenges stemming from the application of science and technology. *STS forum* community also explores opportunities arising from science and technology and addresses how to remove barriers by using science and technology to solve the problems facing humankind.

The rapid progress of science and technology has brought economic growth and enriched the quality of our lives on the one hand. However, the advance of science and technology has raised important ethical, safety and environmental issues: possible negative applications are threatening humankind's own future. We call these "the lights and shadows of science and technology": we must develop the lights and control the shadows.

*STS forum* focuses on many aspects of science and technology in society: for example, technological development in genomics like genome engineering and iPS cell technology; energy and environmental issues including the nuclear power option; and ICT and social changes and related privacy and security issues.

Because the problems we face today are becoming increasingly complex, the scientific community alone cannot control these problems and also, they are beyond the control of any single country. Thus, it is essential that not only professional scientists like scholars and researchers, but also policymakers, and business leaders from all over the world gather and discuss these science and technology issues from the

long-term perspective, i.e. 100 to 500 years, for the future of the humankind.

This is the fundamental concept of *STS forum*, where global leaders meet for three days at the forum's Annual Meeting in Kyoto, starting on the first Sunday of October. Japanese Prime Minister Shinzo Abe, Honorary Chairman of *STS forum*, attends the Annual Meeting every year. Other prominent leaders including Nobel Laureates attending in recent years have included the prime ministers of France, Sri Lanka, and Slovenia, and the deputy prime minister of the Russian Federation.

In 2018, 1,400 leaders from 80 countries and regions, including 11 Nobel Laureates, met in Kyoto. In addition to ten plenary sessions and 24 concurrent sessions under eight themes, 12 side meetings, including the Science Ministers' Round Table, the University Presidents' Meeting, CEO and CTO Meetings were held, attended by 22 ministers, 53 university presidents, 21 CEOs and 40 CTOs.

The *STS forum* launched a "Dialogue between Future Leaders and Nobel Laureates" in 2015, and in 2018, 145 future leaders enjoyed stimulating discussions with 11 Nobel Laureates. The *STS forum* will continue to contribute to fostering younger leaders in various fields by inviting them to our networking opportunities in Kyoto and other locations.

The *STS forum* is also active in organizing outreach activities in the form of workshops. In 2018, three workshops were held: an India Workshop in Delhi, an ASEAN Workshop in Cebu, an EU Workshop in Brussel.

Now in its second decade, the *STS forum* has grown from a mere conference into a movement for global leaders to address science and technology-related issues for the future of humankind. We hope that many world leaders will join the *STS forum* Annual Meeting in Kyoto in order to "PAVE THE WAY FOR FUTURE GENERATIONS."

# Our Vision

## 1.

### *Lights and Shadows*

The explosive progress of science and technology has brought economic growth and enriched the quality of life, but also raised a number of challenges for society such as global warming and privacy in ICT. STS *forum* seeks to strengthen the lights and control the shadows of science and technology.

## 2.

### *Collaboration among Academia, Industry and Government*

No one country or constituency alone can solve the issues of science and technology facing the humankind. STS *forum* is a platform to form collaborative networks among global leaders in academia, industry and government in order for us to build a better world together.

## 3.

### *Long-Term Perspective*

STS *forum* takes a truly long-term perspective of 100 to 500 years ahead, thereby seeking to foster sustainable society for generations to come.

# A Unique Forum

## What is STS *forum*?

STS *forum* is a registered non-profit organization led by Koji Omi, Founder and Chairman, with Prime Minister Shinzo Abe being the Honorary Chairman. The forum is also guided by the Board and the Council composed of dignitaries from around the world.

Around 1,400 participants from about 80 countries and regions engage in lively discussions for 3 days every October at the Kyoto International Conference Center in Kyoto, Japan. Participation in STS *forum* is by invitation only.

## Why Attend?

To connect with other people like you who wish to change the world for the better, and who can address the problems we face from a broad range of perspectives.

You will have the rare opportunity to network with diverse groups of global leaders including heads of academic institutions, leading corporate executives and top government officials. In 2018, 11 Nobel Laureates, 22 ministers, 53 university presidents, 21 CEOs, and 40 CTOs attended the STS *forum* 15<sup>th</sup> Annual Meeting.

Taking part in many networking meetings and smaller thematic sessions, where you will be able to engage in open and informal discussions with participants of diverse backgrounds and expertise, you gain fresh insights and novel perspectives on the key science and technology issues of our times, and explore innovative ideas and initiatives together.

## What is The Impact?

STS *forum* has become a global movement embracing the scientific community and beyond, forming networks among leaders from around the world to share collective knowledge and realize its full potential. Recognized as an essential venue for science and technology, an official statement summarizing the forum discussions is sent to international heads of state, in the hopes of building a richer and more sustainable future.

## Plenary Sessions



Prime Minister Shinzo Abe of Japan gives a keynote speech at the Opening Plenary.

## Concurrent Sessions

A distinctive feature of *STS forum* is the multiple concurrent sessions on several key themes affecting the humankind.

During each session, speakers are allotted 6 minutes to deliver presentations, followed by active discussions. The concurrent sessions are open to all participants, who are invited to engage in practical, face-to-face dialogue on an equal footing.

The sessions also offer opportunities to build networks across borders and disciplines, bringing together leaders from around the globe who share a common recognition of the issues we face.



"Dialogue between Future Leaders and Nobel Laureates": Prof. Dr. Ada E. Yonath of Weizmann Institute of Science, Israel [2009 Nobel Laureate in Chemistry]



Concurrent Session: Artificial Intelligence (AI)

## Peer Meetings and Networking

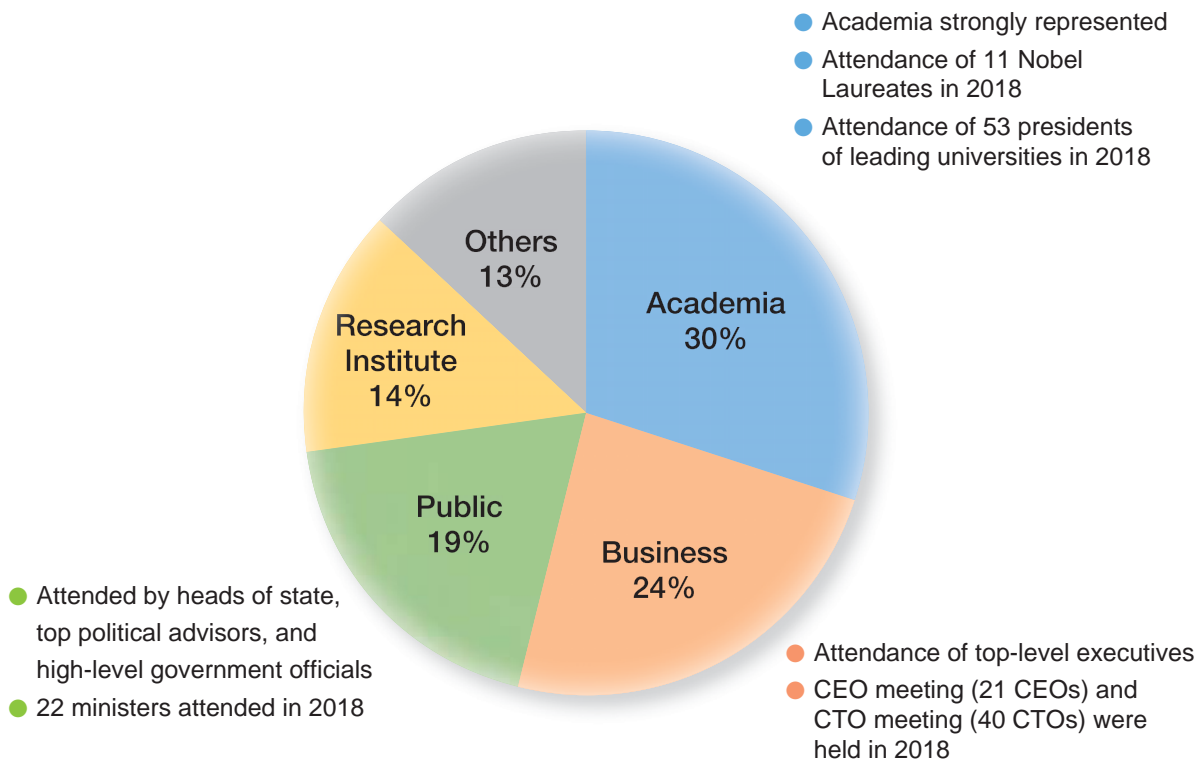
Specialized peer meetings are also held among science and technology ministers, university presidents, funding agency presidents, academy of science presidents, academy of engineering presidents, CEOs (chief executive officers), and CTOs (chief technology officers) of corporations. Additionally, the forum invites selected young participants in an effort to nurture future leaders with diverse perspectives for the next generation and beyond.

*STS forum* offers ample opportunity for network-building and the exchange of views among the participants with events such as a welcome reception, buffet lunches, an official banquet and a special buffet dinner at one of Kyoto's cultural heritage sites.

# A Global Movement

In 2018, the number of participants at the STS *forum* 15<sup>th</sup> Annual Meeting has grown to over 1,400 from about 80 countries and regions around the world. Also the ratio between representatives of academia, industry and government has become well balanced over the years.

## 2018 PARTICIPANTS BY CONSTITUENCY



- ◇ 15% of 2018 participants were attending for the second time
- ◇ 28% of 2018 participants were attending for at least the third time
- ◇ Repeated participation is a testament to the enduring value and timeliness of the discussions

## About Participation in STS *forum*

- Participation is upon invitation only.
- Participation fee: Industry - JPY 120,000 / Others - JPY 70,000
- All sessions are conducted in English.
- Participants are requested to make their own travel arrangements to and at the venue.

# STS forum Council Members

(In alphabetical order of individual names)

(\* Board Members / \*\* Auditor)

- ABDUL HAMID, Zakri**, Joint Chairman, Malaysian Industry-Government Group for High Technology, MY
- ALBERTS, Bruce M.**, Chancellor's Leadership Chair in Biochemistry and Biophysics for Science and Education, University of California, San Francisco (UCSF); former President, National Academy of Sciences, US
- \*ANZAI, Yuichiro**, Senior Advisor and Director of Center for Science Information Analysis, Japan Society for the Promotion of Science (JSPS), JP
- ARIMA, Akito**, Chancellor, Musashi Academy of the Nezu Foundation; former Minister of Education, Science, Sports and Culture; former President, The University of Tokyo, JP
- BLANCO MENDOZA, Herminio**, Founder and Chief Executive Officer, Soluciones Estratégicas; President (Chairman), IQOM Inteligencia Comercial, MX
- CAMPBELL, Donald W.**, Senior Strategy Advisor, DLA Piper (Canada) LLP, CA
- CANDEL, Sébastien**, President, French Academy of Sciences, FR
- CARTY, Arthur J.**, Inaugural Executive Director Retired, University of Waterloo, CA
- CHUBACHI, Ryoji**, President, The National Institute of Advanced Industrial Science and Technology (AIST), JP
- CHUBAYS, Anatoly B.**, Chairman and Chief Executive Officer, RUSNANO Management Company LLC, RU
- CHUCHOTTAWORN, Pailin**, Deputy Minister of Transport, TH
- CLARK, Megan**, Advisory Board Member, Bank of America Merrill Lynch, AU
- COLOMBANI, Pascal**, Honorary Chairman and Corporate Director, VALEO SA, FR
- COLWELL, Rita R.**, Distinguished University Professor, Center for Bioinformatics and Computational Biology, University of Maryland; Professor, Johns Hopkins Bloomberg School of Public Health; former Director, National Science Foundation (NSF), US
- CONNELLY, Jr., Thomas M.**, Executive Director and CEO, American Chemical Society; former Executive Vice President and Chief Innovation Officer, DuPont, US
- DIJKGRAAF, Robbert**, Director and Leon Levy Professor, Institute for Advanced Study (IAS), US
- DUSZYNSKI, Jerzy**, President, Polish Academy of Sciences (PAS), PL
- \*FRIEDMAN, Jerome I.**, Institute Professor and Professor of Physics Emeritus, Massachusetts Institute of Technology (MIT); Nobel Prize in Physics (1990), US
- FUCHS, Alain**, President, Université PSL (Paris Sciences & Lettres), FR
- GOLDIN, Daniel S.**, Founder & CEO, Knuedge; former NASA Administrator, US
- GREGORIAN, Vartan**, President, Carnegie Corporation of New York, US
- GROS, François**, Honorary Permanent Secretary, French Academy of Sciences, FR
- \*GRUSS, Peter**, President and CEO, Okinawa Institute of Science and Technology Graduate University (OIST); former President, Max Planck Society for the Advancement of Science, DE
- GUTFREUND, Hanoch**, Executive Committee Chairperson, Israel Science Foundation; Professor Emeritus, Physics, The Hebrew University of Jerusalem, IL
- HACKER, Jörg**, President, The German National Academy of Sciences Leopoldina, DE
- HAMAGUCHI, Michinari**, President, Japan Science and Technology Agency (JST), JP
- HARA, George**, Chairman, The Alliance Forum Foundation; Special Adviser, Cabinet Office of Japan, JP
- HASHIMOTO, Kazuhito**, President, National Institute for Materials Science (NIMS), JP
- HASSAN, Mohamed Hag Ali**, President, Sudanese National Academy of Sciences (SNAS), SD
- HOFFMANN, Jules Alphonse**, Member, French Academy of Sciences; Nobel Prize in Physiology or Medicine (2011), FR
- \*HOLLIDAY, Jr., Charles O.**, Chairman, Royal Dutch Shell plc.; former Chairman of the Board, Bank of America; Chairman Emeritus, Council on Competitiveness; former Chairman and Chief Executive Officer, DuPont, US
- HOLT, Jr., Rush D.**, Chief Executive Officer, American Association for the Advancement of Science (AAAS); former Member, U.S. House of Representatives, US
- HÜTTL, Reinhard F.**, Chairman, Euro-CASE; Vice President, acatech (German Academy of Science and Engineering), DE
- \*ISHIGE, Hiroyuki**, Chairman and CEO, Japan External Trade Organization (JETRO), JP
- JOHNSON, Ray O.**, Executive in Residence, Bessemer Venture Partners; former Senior Vice President and Chief Technology Officer, Lockheed Martin Corporation, US
- KAGERMANN, Henning**, President, acatech (German Academy of Science and Engineering), DE
- KAZAO, Yukihiko**, Director General, Science and Technology in Society forum (STS forum), JP
- KING, David**, former Special Representative for Climate Change, Foreign & Commonwealth Office, UK Government, UK
- KIRLOSKAR, Vikram S.**, Vice Chairman, Toyota Kirloskar Motor Private Limited (TKM), IN
- \*KLEINER, Matthias**, President, Leibniz Association, DE
- KOANANTAKOOL, Thaweesak**, Advisor and former President, National Science and Technology Development Agency (NSTDA), TH
- \*KOMIYAMA, Hiroshi**, Chairman of the Institute, Mitsubishi Research Institute, Inc.; former President, The University of Tokyo, JP
- \*KUMAR, Ashwani**, Senior Advocate Supreme Court; former Union Minister of Law & Justice; former Member of Parliament (Rajya Sabha), IN
- KUROKAWA, Kiyoshi**, Chairman, Health and Global Policy Institute; Professor Emeritus, National Graduate Institute for Policy Studies (GRIPS), JP
- \*LEE, Yuan Tseh**, President Emeritus, Academia Sinica; former President, International Council for Science (ICSU); Nobel Prize in Chemistry (1986), TW
- \*LIM, Chuan Poh**, Chairman, Agency for Science, Technology and Research (A\*STAR), SG
- LIU, Peng**, Managing Director, Sinocity Investment Limited, CN
- MAESINCEE, Suvit**, Minister, Ministry of Science and Technology (MOST), TH
- MATSUMOTO, Hiroshi**, President, RIKEN; former President, Kyoto University, JP
- MAZUR, Eric**, Balkanski Professor of Physics and Applied Physics and Dean of Applied Physics, Harvard University; Past President, The Optical Society, US
- McBEAN, Gordon**, Professor Emeritus, Institute for Catastrophic Loss Reduction, Western University, CA
- \*McKINNEL, Henry A.**, Chairman, Moody's Corporation; former Chairman and CEO, Pfizer; Chairman Emeritus, US Business Roundtable, US
- \*McNUTT, Marcia**, President, National Academy of Sciences, US
- \*MUROMACHI, Masashi**, Executive Adviser, Toshiba Corporation, JP
- MURRAY, Cherry A.**, Benjamin Peirce Professor of Technology and Public Policy (on sabbatical leave), John A. Paulson School of Engineering and Applied Sciences, Harvard University; Visiting Professor of Physics (visiting on sabbatical), University of Arizona; former Director, Office of Science, United States Department of Energy, US
- \*NAKANISHI, Hiroaki**, Chairman, Keidanren (Japan Business Federation); Chairman of the Board, Executive Officer, Hitachi, Ltd., JP
- NOYORI, Ryoji**, Director-General, Center for Research and Development Strategy (CRDS), Japan Science and Technology Agency (JST); Nobel Prize in Chemistry (2001), JP
- \*NURSE, Paul**, Director and Chief Executive, The Francis Crick Institute; former President, The Royal Society; Nobel Prize in Physiology or Medicine (2001), UK
- \*\*OKIMURA, Kazuki**, Director, Japan Foundation of Public Communication on Science and Technology (PCOST); Principal Fellow, China Research and Communication Center (CRCC), Japan Science and Technology Agency (JST), JP
- \*OMI, Koji**, Founder and Chairman, Science and Technology in Society forum (STS forum); former Minister of Finance, JP
- PALIS, Jr., Jacob**, former President, Brazilian Academy of Sciences (ABC), BR
- PANDOR, Grace Naledi**, Minister of Higher Education and Training, ZA
- PRIYANTO, Unggul**, Chairman, Agency for the Assessment and Application of Technology (BPPT), ID
- \*RAMAKRISHNAN, Venki**, President, The Royal Society; Nobel Prize in Chemistry (2009), UK
- RIETSCHEL, Ernst Th.**, European Affairs Representative, acatech (German Academy of Science and Engineering), DE
- ROBERTS, Richard J.**, Chief Scientific Officer, New England Biolabs; Nobel Prize in Physiology or Medicine (1993), UK
- RUBBIA, Carlo**, former Director General, CERN; Professor, Gran Sasso Science Institute (GSSI); Nobel Prize in Physics (1984), IT
- RÜBIG, Paul**, 1st Vice-Chair, Science and Technology Options Assessment (STOA), European Parliament, AT
- RUBINSTEIN, Ellis**, President and Chief Executive Officer, The New York Academy of Sciences (NYAS), US
- \*SAKAKIBARA, Sadayuki**, Honorary Chair, Keidanren (Japan Business Federation), JP
- SATOMI, Susumu**, President, Japan Society for the Promotion of Science (JSPS), JP
- \*SERAGELDIN, Ismail**, Founding Director Emeritus, Library of Alexandria, EG
- SIRILERTWORAKUL, Narong**, President, National Science and Technology Development Agency (NSTDA), TH
- \*TANAKA, Satoshi**, Executive Director, Science and Technology in Society forum (STS forum), JP
- \*UCHIYAMADA, Takeshi**, Chairman of the Board, Toyota Motor Corporation, JP
- \*WALLBERG, Harriet**, Director General, Ministry of Health and Social Affairs; Professor of Physiology and former President, Karolinska Institutet, SE
- WALPORT, Mark**, Chief Executive, UK Research and Innovation (UKRI), UK
- WAMBUGU, Florence M.**, Chief Executive Officer, Africa Harvest Biotech Foundation International (AHBFI), KE
- WINCE-SMITH, Deborah L.**, President & Chief Executive Officer, Council on Competitiveness, US
- YAMAGIWA, Juichi**, President, Kyoto University; President, Science Council of Japan (SCJ), JP
- \*YAMANAKA, Shinya**, Director and Professor, Center for iPS Cell Research and Application, Kyoto University; Nobel Prize in Physiology or Medicine (2012), JP
- YONEKURA, Hiromasa**, Counsellor, Sumitomo Chemical Co., Ltd., JP
- \*YOSHIKAWA, Hiroyuki**, Fellow, Japan Science and Technology Agency (JST); former President, The University of Tokyo; former President, National Institute of Advanced Industrial Science and Technology (AIST), JP
- ZEHNDER, Alexander J.B.**, President and Founder, Triple Z Ltd.; Member, Board of Trustees, Nanyang Technology University; former President of the ETH Board, Swiss Federal Institute of Technology (ETH), CH
- ZERHOUNI, Elias A.**, former President of Global Research & Development, Sanofi SA; former Director, National Institutes of Health (NIH), US

As of October 25, 2018

# Highlights from the 15th Annual Meeting, STS forum 2018



Tasuku Honjo  
Kyoto University, Japan  
[2018 Nobel Laureates  
in Physiology or Medicine]



France A. Córdoba  
National Science Foundation (NSF),  
USA



Maxim Oreshkin  
Ministry of Economic Development of  
the Russian Federation, Russia



Henry A. McKinnell  
Moody's Corporation, USA



Thomas F. Rosenbaum  
California Institute of Technology  
(CALTECH), USA



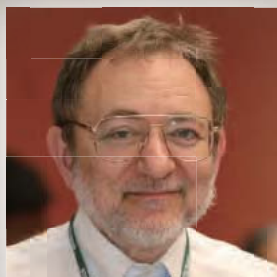
Ole Petter Ottersen  
Karolinska Institutet, Sweden



Rush D. Holt, Jr.  
American Association for the Advancement  
of Science (AAAS), USA



Vikram S. Kirloskar  
Toyota Kirloskar Motor Private Limited  
(TKM), India



Andrew Zachary Fire  
Stanford University School of Medicine,  
USA



Shinya Yamanaka  
Kyoto University, Japan  
[2012 Nobel Laureates  
in Physiology or Medicine]



Bernard Feringa  
University of Groningen, Netherlands  
[2016 Nobel Laureates in Chemistry]



Roongrote Rangsiyopash  
Siam Cement Public Company Limited  
(SCC), Thailand



Catherine Mohr  
Intuitive Surgical, Inc., USA



Ernest J. Moniz  
Massachusetts Institute of  
Technology (MIT), USA



Masaki Sakuyama  
Mitsubishi Electric Corporation, Japan



Giovanni Caforio  
Bristol-Myers Squibb, USA



Manuela Veloso  
J.P. Morgan, USA



Otmar D. Wiestler  
Helmholtz Association of German  
Research Centres, Germany