TSUKUBA CONFERENCE

筑波会議 2019

Summary

October 2 - 4, 2019

How do science, technology and innovation contribute to achieving Society 5.0 and SDGs?

https://tsukuba-conference.com

Tsukuba Conference 2019
Summary

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Tsukuba Conference 2019 - Overview

Main Subject

How do science, technology and innovation contribute to achieving Society 5.0 and SDGs?

Date

October 2 (Wed.) – 4 (Fri.), 2019

Venue

Tsukuba International Congress Center
2-20-3 Takezono, Tsukuba, Ibaraki 305-0032 Japan

Organizer

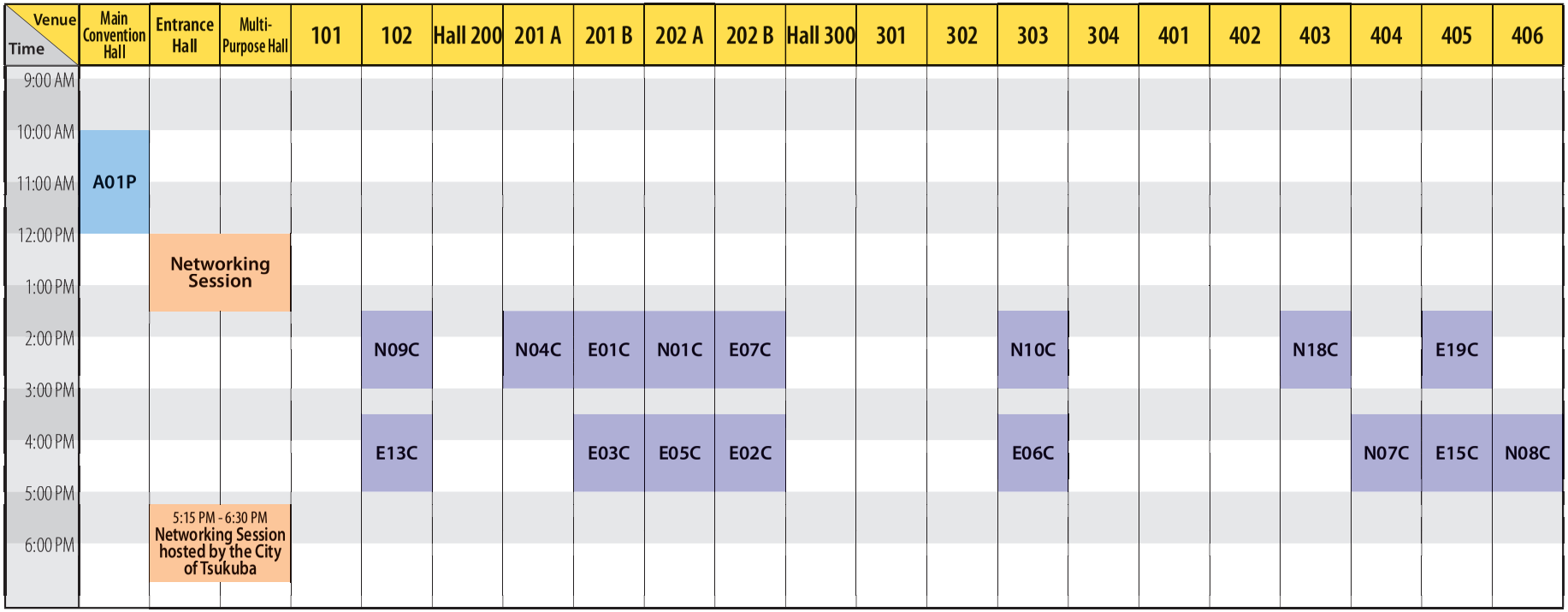
Tsukuba Conference Organizing Council

Number of sessions	
Plenary sessions	5
Concurrent sessions	28
Special sessions	17
Total	50

Number of participants	
Invitees	
from Japan	710
from overseas (64 country/regions)	290
Others	500
Total	1,500

DAY 1 October 2 (Wed.)

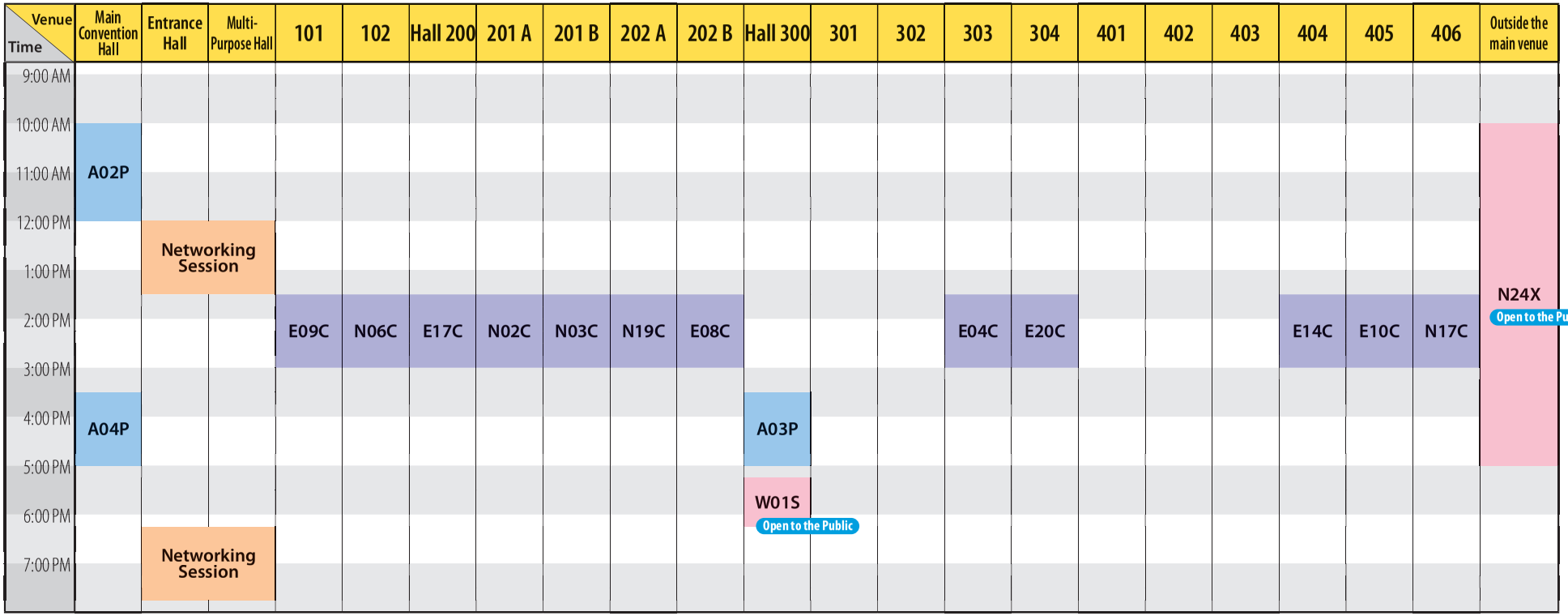
Plenary Session Concurrent Sessions



Session ID	Session Title	Time	Location
A01P	Opening & Keynotes	10:00 AM - 12:00 PM	Main Convention Hall
E01C	Fighting infectious diseases for SDGs achievement in Africa: Challenge of next-generation scientists	1:30 PM - 3:00 PM	201B
E02C	Innovation from advanced basic science	3:30 PM - 5:00 PM	202B
E03C	Contribution to medical care and public health using space utilization technology	3:30 PM - 5:00 PM	201B
E05C	Energy harvesting technologies for powering IoT	3:30 PM - 5:00 PM	202A
E06C	SCIENCE FOR RESILIENCE - Viewing from the scene of a meteorological disaster -	3:30 PM - 5:00 PM	303
E07C	Contribution of RIKEN BioResource Research Center to developing infrastructure for life science	1:30 PM - 3:00 PM	202B
E13C	Exploring Tsukuba as a Startup City	3:30 PM - 5:00 PM	102
E15C	Front Line of the Science Diplomacy	3:30 PM - 5:00 PM	405
E19C	Digital transformation in materials development	1:30 PM - 3:00 PM	405
N01C	International Collaboration and Co-creation for SDGs through Social Sciences	1:30 PM - 3:00 PM	202A
N04C	Achieving Universal Access to Emergency Care through Innovation	1:30 PM - 3:00 PM	201A
N07C	Experiences, ideas, and networking: Life Science solutions to global challenges in the context of Society 5.0 and SDGs	3:30 PM - 5:00 PM	404
N08C	Techno-hegemony: the International Political Economy of Society 5.0	3:30 PM - 5:00 PM	406
N09C	Zero Waste Society through Sport	1:30 PM - 3:00 PM	102
N10C	Establishment of functional recovery and healthy long-life society by regenerative medicine. - Building of technological infrastructure and industrial system -	1:30 PM - 3:00 PM	303
N18C	Future Extreme High Temperature in Developing Asian Mega-Cities and Its Adaptation	1:30 PM - 3:00 PM	403

DAY 2 October 3 (Thu.)

Plenary /Main Sessions | Concurrent Sessions | Special Sessions

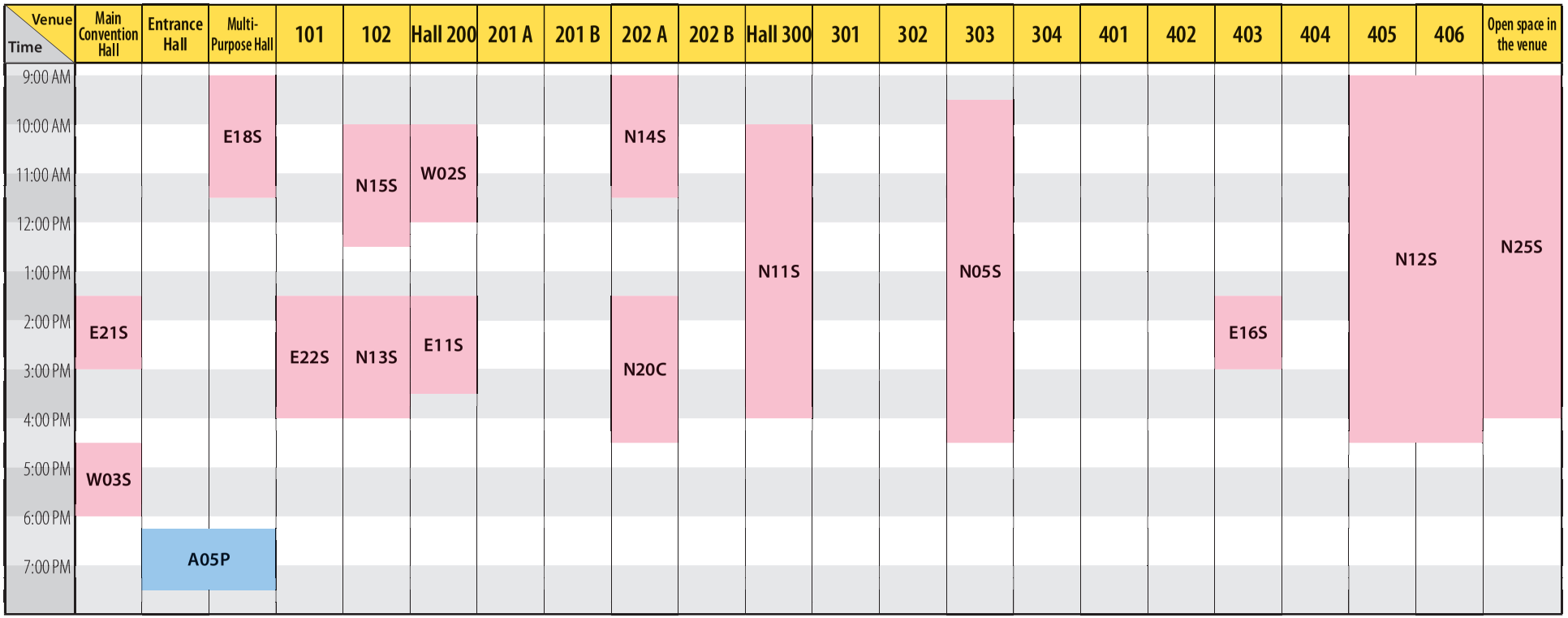


Session ID	Session Title	Time	Location
A02P	Special Plenary with Nobel Laureates	10:00 AM - 12:00 PM	Main Convention Hall
A03P	Entrepreneurship and Innovation for Shaping the Next Society	3:30 PM - 5:00 PM	Hall 300
A04P	ESG investments for the promotion of science and technology : Collaboration is the key for SDGs!	3:30 PM - 5:00 PM	Main Convention Hall
E04C	Research for Society – Dialogue between Young Researchers and Funders	1:30 PM - 3:00 PM	303
E08C	Towards the realization of Society 5.0 in agriculture and food production	1:30 PM - 3:00 PM	202B
E09C	Emerging-electronics innovation for SDGs: Toward synergy among young researchers	1:30 PM - 3:00 PM	101
E10C	Climate Change Adaptation - Promoting Regional Activity -	1:30 PM - 3:00 PM	405
E14C	Tactics for Global Infectious Diseases Control	1:30 PM - 3:00 PM	404
E17C	How perfect is the SDGs? - Reconsideration of SDGs from the viewpoint of inclusiveness and "immiscible" science advices	1:30 PM - 3:00 PM	Hall 200
E20C	Design Science for Future Society Design	1:30 PM - 3:00 PM	304
N02C	Creating a Sustainable Democracy and a New Public Sphere in Society 5.0	1:30 PM - 3:00 PM	201A
N03C	Disaster Resilience, Human Factors, Cyber Resilience toward Realization of Resilience Society	1:30 PM - 3:00 PM	201B
N06C	How can we think about securing foods in the world using biotechnology crops?	1:30 PM - 3:00 PM	102
N17C	Developing a Global Networking System in Medicine	1:30 PM - 3:00 PM	406
N19C	To nurture entrepreneurship continuously, university initiated platform creating outbound open innovation can really work or not.	1:30 PM - 3:00 PM	202A
N24X	Tsukuba Scientific English Conference (TSEC) 2019	10:00 AM - 5:00 PM	Outside the main venue*
W01S	Lecture by the President of the World Cultural Council	5:15 PM - 6:15 PM	Hall 300

* University of Tsukuba (8th Floor, Health and Medical Science Innovation Building, Medical Area, Tsukuba Campus)

DAY 3 October 4 (Fri.) Open to the Public

Plenary Session Special Sessions



Session ID	Session Title	Time	Location
A05P	Closing & Farewell Reception	6:15 PM - 7:30 PM	Multi-Purpose Hall
E11S	Achieving Society 5.0 and Mobility Network with digital innovation	1:30 PM - 3:30 PM	Hall 200
E16S	Diversity on the Arts Project	1:30 PM - 3:00 PM	403
E18S	G7 Young Scientist Meeting: Citizen science for updating "science" in the SDG era	9:00 AM - 11:30 AM	Multi-Purpose Hall
E21S	Virtual Artist IA, Film Concert Screening	1:30 PM - 3:00 PM	Main Convention Hall
E22S	Initiatives for active and creative learning	1:30 PM - 4:00 PM	101
N05S	IoT and AI in Agriculture: Self Sufficiency in Food Production to Achieve Society 5.0 and SDG's Globally	9:30 AM - 4:25 PM	303
N11S	4th International Symposium on Nature-Culture Linkages in Heritage Conservation in Asia and the Pacific: Mixed Cultural and Natural Heritage	10:00 AM - 4:00 PM	Hall 300
N12S	Student Presentation (Oral or Poster presentation, Medical Science & Life Science)	9:00 AM - 4:30 PM	405 & 406
N13S	Practice and Research for Social-Neuro Diversity Science	1:30 PM - 4:00 PM	102
N14S	Open lecture: Role of particle beam therapy in cancer treatment	9:00 AM - 11:30 AM	202A
N15S	What is the next step? How do we realize the future, which ensured diversity and gender equality for creating innovation by young generation?	10:00 AM - 12:30 PM	102
N20C	Human-Agent Interaction and Imagination for Future Society	1:30 PM - 4:30 PM	202A
N25S	Study Anywhere	9:00 AM - 4:00 PM	Open space in the venue
W02S	Special Lectures by the 2019 Winners of the World Cultural Council Awards	10:00 AM - 12:00 PM	Hall 200
W03S	The World Cultural Council 36th Award Ceremony	4:30 PM - 6:00 PM	Main Convention Hall

Executive Summary

In July 2017, the Tsukuba Conference Organizing Council, which consists of distinguished leaders in the Japanese industry, government and academia, decided to create a new forum for “future shapers” (i.e., talented young leaders from industry, government and academia worldwide) and called it “Tsukuba Conference”.

The purpose of the Tsukuba Conference is to bring together future shapers beyond all borders, be they national, professional, disciplinary or institutional, to facilitate discussion and collaboration among them. The conference provides the opportunity for future shapers to express their visions of the future and to meet their potential collaborators, sponsors and investors, who may help promote and implement their ideas, research and development projects generated for the purpose of solving the diverse range of social challenges we encounter.

This vision became a reality with thanks due to many organizations and individuals: five central government agencies (i.e., Cabinet Office; Ministry of Education, Culture, Sports, Science and Technology; Ministry of Economy, Trade and Industry; Ministry of Health, Labour and Welfare; and Ministry of Land, Infrastructure, Transport and Tourism); two local governments (i.e., Ibaraki Prefecture Government and the Tsukuba City Government); our two advisors, ESAKI Leo (President of the Science and Technology Promotion Foundation of Ibaraki) and OMI Koji (Founder and Chairman of the Science and Technology in Society Forum); and, finally, all of our sponsors and member institutions.

With their commitment and support, the first Tsukuba Conference was launched in Tsukuba Science City on October 2–4, 2019. It comprised two major themes: Society 5.0 and the Sustainable Development Goals (SDGs). The SDGs are a well-known

collection of 17 goals defined by the United Nations through their 2030 agenda. Society 5.0 is the Japanese Government's vision of a future society subsequent to the hunter-gatherer society (Society 1.0), agricultural society (Society 2.0), industrial society (Society 3.0), and information society (Society 4.0). It seeks to pursue the resolution of social problems through human-centered approaches which integrate cyberspace and physical space.

Focusing on these two visions, we covered a diverse range of topics in more than 50 sessions (see pp. 2–4). We devoted the first two days to intensive discussion among the invitees, and on the last day we welcomed contributions from the public. It was also our great privilege to host the Award Ceremony of the World Cultural Council for the first time in Japan. Approximately 1500 participants from 250 institutions across 61 countries engaged in truly international and interdisciplinary discussions, through which they expressed their respective visions for the future and met their potential collaborators.

We believe the first Tsukuba Conference has successfully given a voice to young scientists which transcends all borders, who joined forces to build trust between science and society, and to promote science, technology and innovation to achieve the SDGs. This contributes to building Society 5.0 and advancing human-centered solutions which are sustainable for all of us. Their collective voice was captured in the Tsukuba declaration 2019 (see pp. 7–8). Consequently, the Tsukuba Conference has proven to be a fruitful platform for explaining the value of science, technology and innovation to the public in an easy-to-understand and persuasive way, as anticipated by the keynote speakers in the opening ceremony.

On behalf of the Tsukuba Conference Organizing Council, I would like to thank all of the participants, particularly the hundreds of distinguished young leaders from industry, government and academia, for their precious contributions to this brand-new forum. I sincerely hope to see everyone in Tsukuba again in two years.

NAGATA Kyosuke

Chair of the Tsukuba Conference
Organizing Council

Tsukuba Declaration

PREAMBLE

In the face of increasingly complex and interconnected global challenges, it is imperative that the international community develop innovative, sustainable, and interdisciplinary approaches and solutions. The need for strong global leadership across all borders is urgent.

The Tsukuba Conference recognizes and promotes leadership among talented future shapers of industry, government and academia around the globe. It brings together the next generation of leaders in the fields of science, technology and innovation. It provides them with a platform to deepen their understanding of global and regional issues and to develop strategies and solutions for more prosperous, peaceful and sustainable futures.

Adhering to the philosophy of respect for people, nature and diversity, the Tsukuba Declaration affirms and proclaims to the world the resolve of this community of future shapers to work together to solve our pressing global challenges.

Tsukuba Declaration 2019

The first Tsukuba Conference took place in Tsukuba Science City in early October 2019. It had two major themes: Society 5.0 and the Sustainable Development Goals (SDGs). The SDGs are a well-known collection of 17 goals defined by the United Nations' 2030 agenda. Society 5.0 is a vision of the Japanese government that follows on from Society 4.0 (Information Society). Society 5.0 seeks to pursue the resolution of social problems through human-centered approaches that integrate cyberspace and physical space.

Focusing on these two visions, we covered a diverse range of topics in more than 50 sessions. We devoted the first two days to having intensive discussions among the invitees, and on the last day, we welcomed contributions from the public.

Thus, as custodians of the future we hereby declare:

Article 1

We believe that solving our major societal challenges requires us to transcend boundaries and come together.

Article 2

We are committed to speaking truth to power and to giving voice to younger generations.

Article 3

We believe that solutions to global challenges must be human-centered and inclusive.

4 October, 2019

Future shapers assembled

at Tsukuba Conference

DAY 1

October 2 (Wed.)

Opening, keynotes and concurrent sessions

Plenary Session

ID: A01P Date of Report: November 8, 2019

Opening & Keynotes	
Session Organizer	–
Date & Time	October 2 10:00 AM – 12:00 PM
Location	Main Convention Hall
Number of the Participants	Total: 315 (Speakers: 15, Audience: 300)

Summary of the Session

Prior to the ceremony, Virtual Artist IA appeared on stage and delivered a surprise live performance.

The ceremony commenced with a welcome address by Dr. NAGATA Kyosuke, Chair of the Tsukuba Conference Organizing Council. This was followed by a congratulatory address by His Excellency, Mr. HAGIUDA Koichi, Minister of Education, Culture, Sports, Science and Technology of Japan; a congratulatory video message by Mr. OMI Koji, Founder and Chairman of the Science and Technology in Society *forum*; and, finally, three keynote addresses.

The first keynote speaker was Dr. KOBAYASHI Yoshimitsu, Chairperson of the Board of Mitsubishi Chemical Holdings Corporation. He advocated for the development of the Tsukuba Conference (TC) towards becoming the best platform for explaining the value of science, technology and innovation (STI) to the public in an easy-to-understand and persuasive way.

The second keynote speaker was Mr. Jeremy Jurgens, Managing Director and Chief Digital and Innovation Officer of the World Economic Forum. He invited all participants to join him in promoting STI to achieve the SDGs, to build Society 5.0 and to advance the human-centered Fourth Industrial Revolution, which is sustainable for all of us.

The third keynote speaker was Dr. Koen Vermeir, a co-chair of the Global Young Academy (GYA). He recognized a mission common to GYA and TC: to give a voice to young scientists which transcends all borders. He also spoke on the importance of social acceptance of and trust in new technologies and was encouraged to see many TC sessions integrated the social sciences and humanities into their discussions.

Following the ceremony, there was a talk show moderated by Dr. OCHIAI Yoichi, CEO of Pixie Dust Technologies Inc., in which several young leaders from industry and academia from the floor shared their expectations for TC with the audience.

Live performance by IA

Welcome address by Dr. Nagata

Congratulatory address by H.E. Mr. Hagiuda

Video message by Mr. Omi

Keynote by Dr. Kobayashi

Keynote by Dr. Jurgens

Keynote by Dr. Vermeir

Talk show moderated by Dr. Ochiai

Reporter: IKEDA Jun

ID: E01C Date of Report: October 31, 2019

Fighting infectious diseases for SDGs achievement in Africa: Challenge of next-generation scientists

Session Organizer	JICA (Japan International Cooperation Agency)
Date & Time	October 2 1:30 PM – 3:00 PM
Location	Conference Room 201B
Number of the Participants	Total: 45 (Speakers: 5, Audience: 40)

Summary of the Session

The objectives of the session were to discuss how science and technology, and research and development can contribute to advancements in the control of infectious diseases, which lead to a healthier society in terms of “Human Security”. The moderator presented the importance of the control of infectious diseases in Africa and contributions to achieving the SDGs by Japan, followed by presentations on the education of young leaders and the research activities of Hokkaido University and Nagasaki University by faculty members. This also included the status of research on infectious diseases in Africa conducted by international students of each university. With these presentations and through the discussions with the floor, the session concluded it is important for Japan to contribute to combating infectious diseases in African countries by sharing related Japanese experiences and solutions (e.g., the elimination of Lymphatic filariasis) to apply them to the African context. It was also concluded young scientists continue to face many problems, but it is hoped they maintain their motivation by believing their research activities and dedication can lead to world-first findings.

In the session, the following topics were discussed with the floor:

– Why does Japan support African countries? The control of infectious diseases is one of Japan’s concerns, as we might be exposed to an outbreak of infectious disease, especially on occasions of mass gatherings (e.g., 2020 Tokyo Olympics). Of course, it is important to protect our country internally; yet, it is also our duty to share experiences and technologies with the world in combating infectious diseases.
– What kinds of supports do young researchers expect from Government and universities to streamline research activities? Since science is not easy to pursue, a good mentor who motivates and guides researchers on the right track is necessary. Easing many regulations on the usage of bio-resources in Japan will be helpful to streamline such activities. Young researchers should always keep in mind that seeking out factual information should be an important factor in maintaining motivation among researchers.

Researchers interested in Africa and infectious diseases participated in the session

Contributions to the control of infectious diseases in Africa by research activities in Japan were discussed with the floor and presenters

Reporter: HIRAOKA Hisakazu

Concurrent Session

ID: E02C Date of Report: December 12, 2019

Innovation from advanced basic science	
Session Organizer	Mihoko Nojiri
Date & Time	October 2 3:30 PM – 5:00 PM
Location	Conference Room 202B
Number of the Participants	Total: 40 (Speakers: 5, Audience: 35)

Summary of the Session

In this session, we discussed how high energy physics (HEP), a field in basic science in which the goal is to understand the ultimate structure of matter, drives developments to improve human life. Scientists in HEP have built a worldwide system of information which shares cutting-edge technologies ranging from high-sensitivity sensors and high-quality beams to advanced-computing technology for a deeper understanding of nature. In this session, we discussed how to share the most advanced science technology toward the development of Society 5.0 and the sustainable development goals (SDGs). Pierini, in particular, spoke about the open science policy CERN, which acts to accelerate technology transfer. Likewise, Katayama and Haba emphasized the direction of medical applications in this field, and Ono highlighted the strengthening of material research toward the automatization of procedures using AI.

The speakers in this session and their respective presentation titles are as follows:

Nakahama, Yu (Nagoya University): “Innovations from Basic Research-High Energy Physics.”

Maurizio Pierini (CERN): “How IT Supports Big Science and Society.”

Kataoka Jun (Waseda): “Spectral Photon Counting CT (SPCCT) as a New Diagnostic Tool for Medial Innovation.”

Haba, Hiromitsu (Riken): “RI Production-Chemistry of New Elements to Diagnoses and Treatment of Cancer.”

Ono, Kanta (KEK): “Materials Informatics: Materials Innovation with AI.”

See https://www.kek.jp/sdg/ for KEK and the SDGs.

Discussion in the session

Kataoka spoke on the application of cosmic gamma ray sensors

Haba spoke on the application of the beam which created Nh133

Ono spoke on materials informatics

Pierini explaining efforts by CERN

Nakahama explaining the aim of HEP

Reporter: Mihoko Nojiri

ID: E03C Date of Report: December 16, 2019

Contribution to medical care and public health using space utilization technology	
Session Organizer	JAXA
Date & Time	October 2 3:30 PM – 5:00 PM
Location	Conference Room 201B
Number of the Participants	Total: 44 (Speakers: 4, Audience: 40)

Summary of the Session

The purpose of this session was to introduce activities aimed at contributing to knowledge in areas from space utilization technology to “healthy longevity” and “control of infectious diseases in developing countries”. Four experts delivered presentations and facilitated panel discussions from the following three perspectives:

- Expectations for drug discovery research using the International Space Station (ISS);
- contributing to the creation of a healthy and long-standing society using the ISS; and
- cooperation with the World Health Organization (WHO) through supporting the selection of water sampling points using satellite-derived topography data for the reduction of polio.

Throughout this session, contributions and expectations regarding the aims set out by the sustainable development goals (SDGs) were shared with participants through interactions between space utilization, ground activities and future prospects.

Dr. Mukai's presentation

Dr. Yamamoto's presentation

Dr. Kaneshiro's presentation

Dr. Ohyoshi's presentation

Panel discussion

Questions from the audience

Reporter: Shiho Ogawa/JAXA

ID: E05C Date of Report: November 10, 2019

Energy harvesting technologies for powering IoT	
Session Organizer	National Institute for Materials Science (NIMS) (Local organizer: Takao Mori)
Date & Time	October 2 3:30 PM – 5:00 PM
Location	Conference Room 202A
Number of the Participants	Total: 62 (Speakers: 4, Audience: 58) at maximum time

Summary of the Session

In Session 3, distinguished speakers gave excellent talks and overviews on different energy harvesting technologies: Professor Yuji Suzuki (University of Tokyo), 'Electret-based Energy Harvesting for Wearable Devices'; Professor Peter Franz Rogl (University of Vienna), 'Half Heusler Thermoelectrics with High TE Efficiency'; and Professor Fabien Grasset (CNRS), 'Transparent Nanocomposites and Coatings for Photoconversion Applications'. Many young scientists throughout Japan as well as abroad were invited, and the room was full. There was also an active Q&A session and vibrant panel discussion session on future issues.

The main discussion points are listed below:

– State of the art research development regarding energy harvesting technologies (e.g., thermoelectric, vibration and photoconversion) for powering IoT sensors and devices.
– Level of the performance of materials/technologies versus desired levels for applications.
– What are the challenges? Specifically, what is the most critical aspect which must be solved regarding these emerging technologies to reach wide-scale applications?

The following key messages, conclusions and proposals were generated:

Energy harvesting technologies (e.g., thermoelectric, vibration and photoconversion) for powering IoT sensors and devices have the potential to create a huge new market.

It is important to understand the jump from materials and technology development to applications, where multidisciplinary cooperation across a wide range of fields (including electrical engineering, system engineering, et cetera) is necessary.

The implementation of policy to support (or initially subsidize) such new energy harvesting technologies is crucial for their success in application.

View of the symposium

View of the symposium

View of the symposium

View of the symposium

View of the symposium: Panel discussion

View of the symposium: Panel discussion

Reporter: Takao Mori

ID: E06C Date of Report: October 30, 2019

SCIENCE FOR RESILIENCE **- Viewing from the scene of a meteorological disaster -**	
Session Organizer	Makoto Shimamura Director-General, NIED (National Research Institute for Earth Science and Disaster Resilience) Innovation Center for Meteorological Disaster Mitigation
Date & Time	October 2 3:30 PM – 5:00 PM
Location	Conference Room 303
Number of the Participants	Total: 46 (Speakers: 6, Audience: About 40)

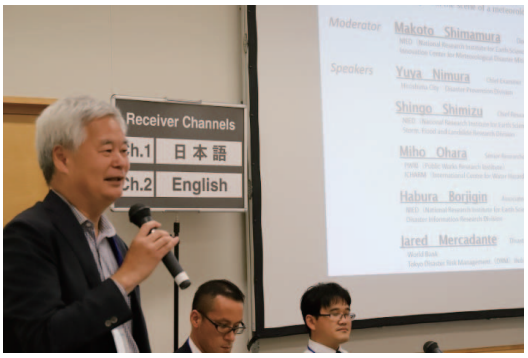
Summary of the Session

Due to urbanization and climate change, the impacts of meteorological disasters have intensified in recent years, where they threaten the realization of the sustainable world captured in the SDGs.

In this session, researchers in disaster resilience science, practitioners in local governments, and international organizations discussed from their unique perspectives how they overcome various issues encountered at disaster sites with the help of science and technology.

From the discussion it was concluded that it is vital to enable each country/region/inhabitant to take effective measures through providing disaster information with a high degree of accuracy to disaster sites as soon as possible and, furthermore, evaluating regional resilience in detail is important.

Moreover, it was concluded that implementing comprehensive measures (which includes scientific aspects) both locally and globally is important since disaster resilience is subject to factors such as the economy, population, culture and systems.



Dr. Shimamura of NIED as a moderator

Mr. Nimura, Hiroshima City

Dr. Shimizu and Dr. Borjigin, NIED

Dr. Ohara, ICHARM

Mr. Mercadante, World Bank

The venue at Room 303, ICC

Reporter: Makoto Shimamura

ID: E07C Date of Report: October 2, 2019

Contribution of RIKEN BioResource Research Center to developing infrastructure for life science	
Session Organizer	RIKEN BioResource Research Center
Date & Time	October 2 1:30 PM – 3:00 PM
Location	Conference Room 202B
Number of the Participants	Total: 64 (Speakers: 4, Audience: 60)

Summary of the Session

In this session, we discussed (from various perspectives) how the RIKEN BioResource Research Center (BRC) can contribute to health and medical care in a society aiming for longevity, while also considering Society 5.0 and the SDGs. First, Dr. Toshihiko Shiroishi, Director of the BRC, delivered a keynote address introducing the activity of the BRC. He also presented the new trends in research, using animal models (i.e., mice) to address the health and medical challenges in a longevity society. Next, three distinguished researchers presented insightful and encouraging talks introducing their excellent studies using bioresources towards solving health and medical problems. Dr. Kenya Honda of Keio University/RIKEN IMS showed a successful trial on microbial-based immunotherapies using mouse notobiotes. Dr. Junichi Tanaka of Showa University presented a talk on the generation of 3D salivary gland organoids from the self-organization of the embryonic stem cells of mice. Finally, Dr. Hayashi of RIKEN BRC introduced their disease-focused research which uses disease-specific iPS cells stored in the RIKEN Cell Bank. Upon the delivery of these addresses, we engaged in a very good discussion regarding the future direction of bioresource development and its usability for promotion of life science and medical research.

Audience of RIKEN BRC concurrent session

Keynote address: Dr. Toshihiko Shiroishi

Questions and answers

Dr. Kenya Honda

Dr. Junichi Tanaka

Dr. Yohei Hayashi

Reporter: Toshihiko Shiroishi

ID: E13C Date of Report: November 5, 2019

Exploring Tsukuba as a Startup City	
Session Organizer	The City of Tsukuba
Date & Time	October 2 3:30 PM – 5:00 PM
Location	Conference Room 102
Number of the Participants	Total: 49 (Speakers: 4, Audience: 45)

Summary of the Session

Tsukuba, the largest Science City in Japan, is home to more than 150 prominent research institutions, all of which generate the seeds of technology for new products and services. The city collaborates with research institutions to promote the practical implementation of those products and services and to support the launch of startup companies. What is our strength as a Startup City? At this session, we explored the possibilities of expansion as a Startup City. The panelists involved work in our collaborating cities (i.e., the U.S. and China).

The following panelists were in attendance:

– Dr. Tatsuo IGARASHI, Mayor of the City of Tsukuba.
– Mr. Taku UMEZAWA, Partner and Japan Chairman, A.T. Kearney; Chairman of CIC, Japan.
– Mr. TAKASU Masakazu, Co-Founder of Nico Tech Shenzhen Community.
– Ms. Ryoko MANABE, Managing Director of Endeavor, Japan.

The main points generated in the discussions comprised the following:

– Innovation is not only triggered by numbers but density. Institutions in Tsukuba are gathered within a 10-km radius.
– Easing policies to allow researchers to start side businesses.
– Providing opportunities for researchers to turn the outcomes of their work into products and/or services.
– The need to accelerate collaboration with industry—specifically, Tsukuba lacks the image of lucrative businesses.

The following conclusions were made:

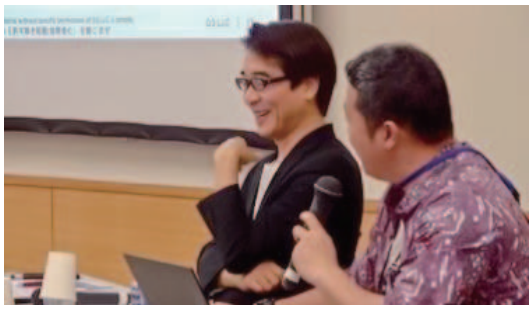
– More experts on venture capital and management are needed.
– More freedom, experimentation and open-mindedness are needed to make new things more interesting.
– More public procurement from startup companies and venture companies is needed.
– More places and opportunities are needed for researchers from diverse fields to come together to generate ideas.
– Business and marketing design schools are needed in Tsukuba to foster human resources, particularly individuals with creativity and business/technological skills.
– Deregulation within municipalities is needed (i.e., going paperless).

Opening

Presentation

Presentation

Presentation



Discussion

Q&A

Reporter: Science and Technology Promotion Division, The City of Tsukuba

Concurrent Session

ID: E15C Date of Report: November 19, 2019

Front Line of the Science Diplomacy	
Session Organizer	Japan International Science and Technology Exchange Center (JISTEC)
Date & Time	October 2 3:30 PM – 5:00 PM
Location	Conference Room 405
Number of the Participants	Total: 82 (Speakers: 7, Audience: 75)

Summary of the Session

From the perspective of science diplomacy and its value, this session focused on science *for* diplomacy and science *in* diplomacy. Throughout this session, three points were taken up as pillars for the discussion that followed. These comprised the following:

1) The use of science in developing bilateral and multilateral relations.
2) Addressing global challenges and developing global public goods (GPGs) through dialogue and collaboration in science.
3) Securing evidence-based knowledge through dialogue and collaboration in science.

The main points were as follows:

1) Diplomat speakers explained the significance of science diplomacy for each country. Each country has been developing its science network with other countries and international organizations worldwide to enhance science diplomacy.
2) As a good example of science diplomacy, marine science and technology was taken up. It was explained that marine scientific research activities need strong support from science diplomacy platforms and international collaboration.
3) From the viewpoint of government and funding agencies, science diplomacy is becoming increasingly important. For example, science, technology and innovation (STI) toward the SDGs requires development under science diplomacy.

Opening

Seven speakers

Presentations from speakers

Discussion among speakers

Q&A with the audience

Closing remarks

Reporter: HIROSE Kenkichi (Chief Executive Director, Japan International Science and Technology Exchange Center(JISTEC))

ID: E19C Date of Report: November 28, 2019

Digital transformation in materials development	
Session Organizer	Kaita Ito
Date & Time	October 2 1:30 PM – 3:00 PM
Location	Conference Room 405
Number of the Participants	Total: 35 (Speakers: 5, Audience: 30)

Summary of the Session

First, the session organizer delivered an overview of the concept of digital transformation. He explained what digital transformation is, why it is necessary in the field of materials science and engineering, and what is difficult to achieve in terms of digital transformation in the field of materials science and engineering. Next, the speakers introduced themselves. They came from diverse research backgrounds and careers, and they highlighted the fields they were from, why they became involved in the materials integration (MInt) and materials informatics (MI) fields and, finally, what they are currently doing regarding the MInt and MI fields. Following this, a panel discussion was given on two themes, with occasional questions and answers from the audience. The first theme pertained to the meaning of experimental science in the near future of the digital transformation era (i.e., what does experimental science mean when one of the main objectives of digital transformation is to reduce the number of experiments?) The second theme related to how engineers use data science when it becomes a common tool in the field of materials engineering.

Reporter: Kaita Ito

Concurrent Session

ID: N01C Date of Report: October 14, 2019

International Collaboration and Co-creation for SDGs through Social Sciences	
Session Organizer	Muneo Kaigo Hidehiro Yamamoto
Date & Time	October 2 1:30 PM – 3:00 PM
Location	Conference Room 202A
Number of the Participants	Total: 63 (Moderators: 2, Speakers: 3, Audience: 58)

Summary of the Session

The guest speakers for this session were Dr. Pornchai Mongkhonvanit (President of Siam University), Dr. Hilligje van'tLand (Secretary General of the International Association of Universities), and Mr. Nobuyuki Ota (CEO at Valeocon Management Consulting Asia Pacific). The main focus of the talks delivered in this session was on the role of higher education and how the social sciences and humanities can play an important role toward the achievement of the sustainable development goals (SDGs).

Education and research—and their contributions to society—represent vital steps that can be taken by those involved in higher education. Education fosters the next generation, where it is essential for the creation of opportunities to continue learning, innovating and sharing knowledge. Research about to local and global issues plays an important role in creating the necessary foresight in terms of new threats to humanity while also constructing opportunities through new partnerships and collaboration. Societal contributions through education range from cooperation among local communities and creating a knowledge-based economy to building strategic partnerships with local actors.

Higher education has an enormous role to play in efforts toward achieving the SDGs; however, a redefinition of higher education is necessary. In today's world, many tensions exist—specifically, those pertaining to global vs. local relations, tradition vs. modernity, spirituality vs. materialism, long-term vs. short-term, competition vs. equality, and national vs. transnational (among others). These tensions limit economic development and create problems for social equality, adding stress to our global environment. Therefore, the role of Society 5.0 is important, as this may represent a solution for tackling the issues that add such tensions and stressors to our world. In approaching such solutions, the role of humanities and the social sciences, and higher education is vital. This concurrent session acknowledges that one university alone cannot combat all such challenges; therefore, the importance of the international research network and cooperation among universities (particularly those being created by IAU) cannot be underestimated along the path toward achieving the SDGs.

Dr. Pornchai Mongkhonvanit (President of Siam University) and Dr. Hilligje van't Land (Secretary General of the International Association of Universities

Mr. Nobuyuki Ota (CEO at Valeocon Management Consulting Asia Pacific)

Discussion among participants and speakers

Discussion among participants and speakers

Participants (from rear view of the room)

Entrance poster

Reporter: Muneo Kaigo

ID: N04C Date of Report: October 15, 2019

Achieving Universal Access to Emergency Care through Innovation	
Session Organizer	Takaaki Suzuki
Date & Time	October 2 1:30 PM – 3:00 PM
Location	Conference Room 201A
Number of the Participants	Total: 30 (Speakers: 8, Audience: 22)

Summary of the Session

Currently, the leading cause of death in the younger generation worldwide is road traffic accidents (RTAs). Non-communicable diseases (NCDs) such as stroke and ischemic heart disease have shown an increasing impact on the health status of people globally. Increasing the capacity of emergency medicine (EM) is urgently needed, where it is one of the most pressing health issues in many countries.

In this session, global EM leaders from Thailand, Laos, Taiwan, South Korea and Japan presented their strategies toward solving EM challenges through innovation. The following is a list of presenters and the topics on which they presented:

1. Yu Chun CHIEN (Taiwan): “Resuscitation by People Empowered by Phone.”
2. Korakot APIRATWARAKUL (Thailand): “Achieving Universal Access to Thailand Emergency Care Innovation.”
3. Somsak TIAMKAO (Thailand): “Application for Stroke Fast Track.”
4. Khamsay DETLEUXAY (Laos): “Improving Trauma Care across all Levels of Care in Lao PDR.”
5. Kanlayarat LARTHUM (Thailand): “Innovation Nursing Care: A Tool for Preventing Hypoxia and IICP of Intubated Patients with Severe Traumatic Brain Injury in Emergency Room.”
6. Hidetaka FUKUSHIMA (Japan): “A Strategy to Improve Emergency Pre-hospital Care in Japan: Implementing Decision Support IT System: ‘e-MATCH’ for EMS”
7. Sola KIM (Korea): “Development of Mobile Platform for Emergency Medical Consultation and Education.”

During the session, we learned that *empowerment*, *education*, *enthusiasm* are the keywords that represent the successful use of innovative tools in EM. We are aware there are many challenges in this area, not only throughout the stages of development in the use of such tools, but also in terms of implementing them in real clinical situations. Through successful implementation and use of innovative tools in EM, together with the strengthening of EMS, we can move forward with our aim to contribute to the achievement of the SDGs. Recently, the World Health Organization (WHO) adopted this resolution, arguing for the importance of emergency and trauma care. Accordingly, we need to foster international collaboration to successfully implement such innovation in emergency care.

Group photo of session N04C

Reporter:　Takaaki Suzuki

Concurrent Session

ID: N07C Date of Report: November 11, 2019

Experiences, ideas, and networking: Life Science solutions to global challenges in the context of Society 5.0 and SDGs	
Session Organizer	Tsukuba Life Science Innovation Program, Myra O. Villareal
Date & Time	October 2 3:30 PM – 5:00 PM
Location	Conference Room 404
Number of the Participants	Total: 69 (Speakers: 4, Audience: 65)

Summary of the Session

Innovation and research (and the subsequent development of associated technologies) in the life sciences have contributed significantly to advances in people's quality of life, ultimately benefiting societies worldwide. This session hosted scientists from different research fields who could contribute to the discourse on the use of the life sciences to solve global challenges in the context of Society 5.0 and the sustainable development goals (SDGs). For example, our guest speakers were from Switzerland, India, Malaysia and Japan, all of whom come from different specialized fields in life science research and spoke on their own research (i.e., food science, protein structure, pharma, and biomed research) and what they could contribute toward the achievement of Society 5.0. The discussion that followed enabled audience members (including a Nobel Prize Laureate) to speak about their experiences as well as pose questions on how not just Japan, but the whole world could build Society 5.0 and achieve the SDGs. We expected approximately 30 persons to attend our session, but were overjoyed by the overwhelming total of 65 who ultimately attended.

Professor Peter Walde of ETH Zurich

Rapt audience who attended the session

Professor Tan Chin Ping of the Universiti Putra Malaysia

Dr. Bhargava of AIST

Discussion on how life science can contribute to achieving the SDGs and Society 5.0

Dr. Hiroki Irie of Taiho Pharma

Reporter: Myra O. Villareal

Concurrent Session

ID: N08C Date of Report: November 29, 2019

Techno-hegemony: the International Political Economy of Society 5.0	
Session Organizer	KIJIMA Joji
Date & Time	October 2 3:30 PM – 5:00 PM
Location	Conference Room 406
Number of the Participants	Total: 35-40 (Speakers: 5, Audience: 30-35)

Summary of the Session

The focus of this session was how nations compete for technological hegemony and the implications of this for individual freedom and international order. Among the topics discussed were the Sino-American virtual and trade war for 5G, China's technological diplomacy with Latin America, the role of social media in disputed regions such as Kashmir, and the prospects of a new world economic/post-Western international order.

The five guest speakers who attended this session come from Taiwan, the U.S., India, Peru and Brazil. Except for Professor Chung-Chian Teng, Distinguished Professor at National Chengchi University (Taiwan), the remainder were young researchers from other parts of the world with an interest in the East Asian region. Professor Teng, as the first guest speaker, spoke about the China-US trade war in the context of a changing world economic order. The second speaker, Mr. Nicholas Frisch, is the Resident Fellow at Yale Law School and a doctoral candidate in the East Asian Program. He presented on the Sino-American competition over 5G and the future of democracy. The third speaker, Mr. Rohit Jawahar, was previously connected with the University of Madras and is currently a doctoral student in Taiwan. He spoke about social media in Kashmir and the rivalry between India and China. The fourth speaker, Professor Juan Diego Zamudio Padilla of the National University of San Marcos (Peru) and currently a visiting scholar at Fudan University, spoke about Chinese and Japanese multi-national firms in Peru. The fifth and final speaker, Professor Carolina Moehlecke, who is working as an adjunct professor at Getulio Vargas Foundation (Brazil) and is currently a PhD candidate at the University of Texas (Austin), presented on Chinese investments in Latin America. A lively, open forum took place during the session. Even after the session had finished, the audience continued to interact with the guest speakers, all of whom kindly obliged.

Session organizer, Professor Kijima (2nd from left), with the 5 guest speakers

Mr. Nicholas Frisch (center) responding to an audience question

Audience at the session

Professor Juan Diego Zamudio articulating a point

Interacting with the speakers

Professor Tokunaga posing a question

Reporter: Luisa Calanag, Office of Global Initiatives, University of Tsukuba

ID: N09C Date of Report: October 17, 2019

Zero Waste Society through Sport	
Session Organizer	Yasushi Honda
Date & Time	October 2 1:30 PM – 3:00 PM
Location	Conference Room 102
Number of the Participants	Total: 83 (Speakers: 3, Audience: 80)

Summary of the Session

This was a joint symposium through the Joint Master's program in International Development and Peace through Sport (IDS) and Tsukuba International Academy for Sport Studies (TIAS). Among over 50 sessions in the Tsukuba Conference 2019, the symposium attracted considerable attention as the only session concentrated on sports. The audience comprised young researchers, students and practitioners from inside and outside of Japan.

The theme of the symposium was related to the following sustainable development goals: "Quality education" (goal 4), "responsible consumption and production" (goal 12), and "life on land" (goal 15). Three guest speakers introduced the most up-to-date research and situation in each country and region, particularly Europe, the United States and Japan, for a "zero waste society through sports". There is a trend worldwide for businesses and people to share values through their commercial interests and activities based on sustainability. For example, Mr. Ligthart, delivered a presentation on contemporary big sports business (i.e., AFC Ajax in Europe) and its incorporation of values. AFC Ajax has built a new stadium, *Innovation Arena*, which includes an ecology system. Furthermore, Dr. Yim from Kent State University spoke on the current situation in the National Collegiate Athletic Association (NCAA). In the United States, university athletic teams facilitate and undertake advanced eco activities called "zero waste". One of these activities is to recycle all trash from their games. He also explained the academic aspects of sports and ecology, such as the recognition of environmental issues surrounding sports fans and the impact of environmental efforts via sports on society. Mr. Sawada, another guest speaker, used to work for a trading company and, at present, is the representative Director of Green Sports Alliance. He introduced sports business perspectives and the economy in relation to eco activities. In addition, he discussed zero waste activities through sports in Japan and future perspectives of a zero waste society in Japan and worldwide.

In a 1.5-hour symposium, the guests were able to share knowledge and practical examples of environmental efforts made in developed countries through sports. It is clear the field of international development through sports is active not only in developing countries but also developed countries. Therefore, sport is expected to contribute to the solving of global issues, further highlighting the necessity of research through sport.

First slide of the symposium

Mr. Ernst Ligthart

Dr. Yim H. Brian

Mr. Haruki Sawada

Open discussion

Group photo

Reporter: Mihoko Takahashi

Concurrent Session

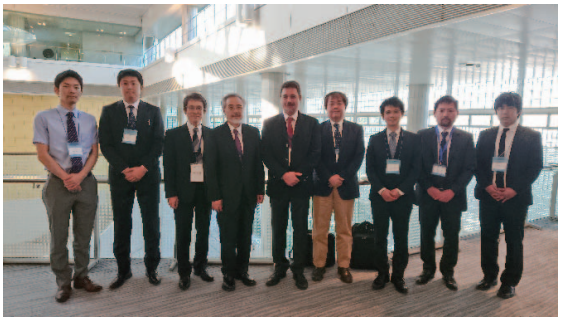
ID: N10C Date of Report: November 7, 2019

Establishment of functional recovery and healthy long-life society by regenerative medicine.
- Building of technological infrastructure and industrial system -

Session Organizer	Akira Matsumura
Date & Time	October 2 1:30 PM – 3:00 PM
Location	Conference Room 303
Number of the Participants	Total: 37 (Speakers: 7, Audience: 30)

Summary of the Session

In recent years, basic research on various stem cell therapies has progressed, and some are being conducted as clinical trials. The spread of such therapies as standard treatments is expected in the near future; however, the technical foundation and industrial system that are required for regenerative medicine to be put into practical use are insufficient. In this concurrent session of the Tsukuba Conference, we hosted presentations from PhD students at the University of Tsukuba on regenerative medicine regarding the brain, spinal cord, peripheral nervous disease and heart disease. This also included a special lecture on “Facing the potentials of combined cell transplantation and neuromodulation for SNC repair”, which was presented by the session’s guest speaker, Professor Guilherme Alves Lepski of Sao Paulo State University. In this session, a method for conducting translational research to achieve the emergence of effective regenerative medicine, as well as a technology base and industrial system for regenerative medicine were discussed. Patients with stroke and heart disease, two of the leading causes of death and diseases which require extensive resources for long-term care worldwide, were discussed with the audience—specifically, the ideal form of regenerative medicine in Society 5.0 to achieve a healthy society through the achievement of functional recovery and social rehabilitation was approached.



Reporter: Aiki Marushima

ID: N18C Date of Report: October 24, 2019

Future Extreme High Temperature in Developing Asian Mega-Cities and Its Adaptation	
Session Organizer	Hiroyuki Kusaka
Date & Time	October 2 1:30 PM – 3:00 PM
Location	Conference Room 403
Number of the Participants	Total: 70 (Speakers: 4, Audience: 66)

Summary of the Session

The session was full to the point where several audience members had to stand. First, Professor Kusaka, who was session organizer, explained the purpose of the session. After this introduction, the following three guest speakers presented. The first speaker was Dr. Hamdi (Royal Meteorological Institute) and his lecture presentation was entitled “Climate change and cities: Lessons learned from the latest ARC3.2 report”. He gave a description of urban climate presented in the latest IPCC report. He also introduced the activity of the urban climate research network, which is a global organization. Following this, he emphasized the importance of the urban climate study, which is to be documented in the next IPCC report. The second speaker was Professor Georgescu (Arizona State University) and his presentation was entitled “A more holistic perspective on healthy and equitable urban environments—beyond meteorology and climate”. He illustrated the contribution of the urban climate study to the adaptation strategy, particularly green policy, which is based on urban agriculture. The third speaker was Dr. Xu (Institute of Urban Meteorology, China Meteorological Administration) and her presentation was entitled “Lessons learned from modeling irrigation from field to regional scales”. She illustrated the importance of the effects of irrigation on regional climate formation. Following these presentations, information regarding the future climate of major cities in Southeast Asia was approached by Professor Kusaka. Dr. Hara of the Saitama prefecture introduced examples of adaptation to urban warming. He also explained the urban climate study will become increasingly important as time goes by.

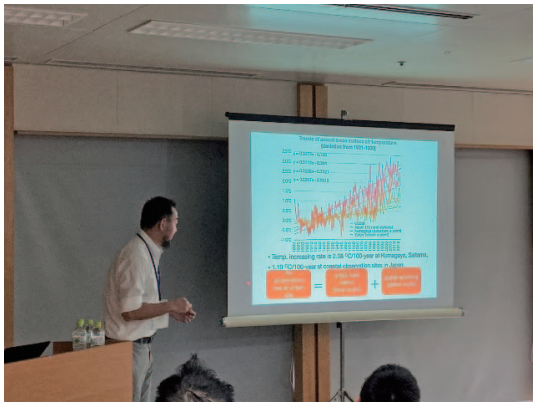
Additionally, the presenters and audience members discussed the role of urban climatologists and confirmed that green policy (e.g., urban agriculture) and global efforts are extremely important. Many audience members, including students from the University of Tsukuba, joined the discussion, which ultimately led to a greater understanding of the importance of the urban climate study, as well as communication between urban climatologists, and other researchers and policy makers. This session enabled an active and fruitful exchange of ideas and opinions.

Opening address by Professor Kusaka

Guest presentation by Dr. Hamdi

Guest presentation by Professor Georgescu

Guest presentation by Dr. XU



Advisor comments (by Dr. Hara)

The session drew a large crowd

Reporter: Hiroyuki Kusaka (University of Tsukuba)

DAY 2

October 3 (Thu.)

Special plenary with Nobel laureates,
main sessions, concurrent sessions and special sessions

Plenary Session

ID: A02P Date of Report: October 31, 2019

Special Plenary with Nobel Laureates	
Session Organizer	IWASAKI Wataru and SHIMPUKU Yoko
Date & Time	October 3 10:00 AM – 12:00 PM
Location	Main Convention Hall
Number of the Participants	Total: 400 (Speakers: 8, Audience: 392)

Summary of the Session

This special plenary session welcomed four Nobel laureates and four young scientists. First, Dr. Esaki spoke on his rules he terms the 'five don'ts' and Drs. Shimpuku and Kishimura introduced the Global Young Academy and Young Academy of Japan. Next, a panel discussion was held on the topic, *What is really needed for young scientists to be successful in their career?* Insightful comments on many important issues were candidly exchanged by Nobel laureates, Drs. Esaki, Kobayashi, Yamanaka and Walker, as well as young scientists, Drs. Vermeir, Saliba, Kishimura, and Nakanishi. The numerous problems many young scientists currently face have not yielded any simple solutions. The interfaces between science and society require more careful attention today. Young researchers need to focus on specialty areas while also maintaining interdisciplinarity. Respect for curiosity and freedom must be protected; however, time management is becoming increasingly difficult. Furthermore, independence and adequate mentorship are both important. And even in the face of severe competition, failure should be accepted as a matter of course towards achieving success. Finally, locating strong research themes and working in adaptable environments is extremely important; however, such conditions are not easily obtained. I believe the fundamental messages generated from this plenary session were invaluable to the young scientists, students, citizens, and policy-makers who were in attendance.

Prof. ESAKI Leo

Dr. KISHIMURA Akihiro

Moderator Dr. IWASAKI Wataru

Discussion among speakers 1

Discussion among speakers 2

Speakers and moderators

Reporter: IWASAKI Wataru

ID: A03P Date of Report: November 11, 2019

Entrepreneurship and Innovation for Shaping the Next Society	
Session Organizer	KODAMA Toru (Associate Professor, University of Tsukuba)
Date & Time	October 3 3:30 PM – 5:00 PM
Location	Convention Hall 300
Number of the Participants	6 Speakers. 1 Moderator. 250 people in the audience.

Summary of the Session

One of the vital purposes of the Tsukuba Conference was to provide participants with opportunities to gain insights regarding how to bring about a great impact on international society through the commercialization of their ideas or research fruits and to find potential partners across borders and cultures for this purpose. The key here is the entrepreneurship for creating and spreading innovation around the globe.

In this session, six distinguished speakers talked about this topic from various perspectives, while being based on their own experiences and expertise. Topics talked over during the panel discussion among them and the Q&A session between them and the audience included, among others: the importance of correlation and circulation between basic research and applied research; KPIs (key performance indicators) for evaluating R&D investments; government-led initiatives for creating and facilitating innovation such as SBIR (Small Business Innovation Research) programs and Startup Visa; and the potential importance of Tsukuba City as a global innovation hub.

<Speakers>

SANKAI Yoshiyuki, CEO, CYBERDYNE Inc. Executive Research Director, Center for Cybernics Research, University of Tsukuba

ZAMMA Kotaro, Head of Open Innovation and Business Incubation Section, NTT Data Corporation

ISHII Yoshiaki, Director, Bureau of Science, Technology and Innovation, Cabinet Office of the Japanese government

OKAJIMA Lena, CEO, Founder, ALE Co., Ltd.

TAKAHASHI Shoko, CEO, Genequest Inc.

MURAKAMI Taiichiro, COO, Representative Director, Pixie Dust Technologies, Inc.

<Moderator>

TANIMOTO Yuka, Assistant Managing Editor and Chief Communication Director, Editorial Team, Forbes Japan

Presentation by speakers

Panel discussion

Panel discussion

Panel discussion

Dialogue between speakers and the audience

Dialogue between speakers and the audience

Reporter: KODAMA Toru

ID: A04P Date of Report: October 31, 2019

ESG investments for the promotion of science and technology: Collaboration is the key for SDGs!

Session Organizer	KAWATEI Masahiro
Date & Time	October 3 3:30 PM – 5:00 PM
Location	Main Convention Hall
Number of the Participants	Total: 83 (Speakers: 3, Audience: 80)

Summary of the Session

The session commenced with a keynote lecture by Dr. Pedro Conceição, the Director of the Human Development Report Office, United Nations Development Programme (UNDP), in which he called for integration beyond silos and to identify actions which move us forward on a broad range of goals more rapidly to accelerate the SDGs. According to him, there are two accelerators for SDG implementation: finance and science and technology. Since achieving the SDGs will create huge business opportunities, private companies should activate and promote their ESG (environmental, social, and governance) investments to facilitate the development of science and technology in collaboration with the public sector.

This was followed by another keynote lecture by Dr. KANO Mitsunobu. As a science and technology co-advisor to the Minister for Foreign Affairs, he first explained the initiatives of the Japanese Government to promote SDGs through STI (science, technology and innovation). Next, as the Vice Executive Director and professor at Okayama University, as well as an individual scientist and educator, he concluded universities can promote scientific thinking to create credible new ideas and to lead society; however, there remains a need to support people who understand “the truth that most people do not agree with now”.

During the ensuing discussion moderated by FUJITA Kaori, Senior Deputy Editor of Nikkei ESG, Nikkei Business Publications Inc., the following topics (among others) were explored by the panelists and the floor: roles UNDP’s “Accelerator Labs” play to accelerate SDGs, the importance of interdisciplinary and multinational networks of young scientists such as the Global Young Academy, how young scientists can break the barriers of one’s discipline and collaborate with a wide range of people, and why academia in general and young scientists in particular do not seem to be making the most of the enormous business opportunities created by the SDGs and ESG.

Keynote by Dr. Pedro Conceição

Keynote by Dr. KANO Mitsunobu

Moderator: Ms. FUJITA Kaori

Panel discussion

Discussion with the floor

Discussion with the floor

Reporter: KAWATEI Masahiro

Concurrent Session

ID: E04C Date of Report: October 11, 2019

Research for Society – Dialogue Between Young Researchers and Funders	
Session Organizer	KOBAYASHI Osamu
Date & Time	October 3 1:30 PM – 3:00 PM
Location	Conference Room 303
Number of the Participants	Total: 32 (Speakers: 15, Audience: 17)

Summary of the Session

Nine young researchers from a broad range of countries and academic disciplines delivered pitch presentations on their work, referring specifically to how they were contributing to the Sustainable Development Goals (SDGs) and suggesting how research funders could offer better support. This was followed by a tone-setting speech by Research England's Executive Chair, David Sweeney, who reminded the audience that researchers must promote both the social and economic benefits of their research to convince funders.

Table discussions followed on key questions related to the roles of funders, funding instruments and international collaboration. Points raised during discussion included the following: international collaboration projects should address the local SDG priorities of the relevant parties and not simply global goals; researcher efficacy can be increased through a more 'bottom-up' approach, involving researchers in the funding decision process and allowing them to use funds more flexibly for their own needs; and, finally, research result dissemination is an important but often overlooked aspect of the process and funders must financially support researchers in disseminating results inside and outside the traditional academic journal system.

The President of The World Academy of Sciences, Mohamed Hassan, reflected the feeling of the group in his concluding remarks when he stated there needs to be more communication and cooperation between a variety of stakeholders and that interdisciplinary research across national boundaries—especially by younger researchers—will be the quickest route to achieve the SDGs.

Moderator:

– Osamu Kobayashi, Director of the Department of International Affairs, Japan Science and Technology Agency, Japan.

Speaker:

– David Sweeney, Executive Chair, Research England, UK.

Group Discussion Leaders:

- Melanie Cullins, Executive Director, International Innovation Office, National Research Council Canada, Canada.
- Nugroho Dwi Hananto, Acting Head of Deep Sea Research Center, LIPI, Indonesia.
- Nare Prudence Makhura, Director for Overseas Collaborative Grants and Initiatives, Knowledge Advancement and Support (KAS), National Research Foundation (NRF), South Africa.
- David Sweeney, Executive Chair, Research England, UK.

Special Guest:

- Mohamed H. A. Hassan, President of The World Academy of Sciences (TWAS), Italy.

Pitch Presenters:

- Barbara Kabai Burmen, Senior Research Officer, Kenya Medical Research Institute and Centers for Disease Control Research and Public Health Collaboration, Kenya.
- Tsunenori Kameda, Unit Leader, Division of Biotechnology, National Agriculture and Food Research Organization, Japan.
- Annop Klamchuen, Team Leader, Nanocharacterization Research Team, NANOTEC, Thailand.
- Mattheus Theodor Loots, Senior Lecturer, Department of Statistics, University of Pretoria, South Africa.
- Norazira Abdu Rahman, doctoral student, Department of Aquatic Bioscience, University of Tokyo, Japan.
- Hichem Sebai, Associate Professor, Department of Animal Biotechnology, Higher Institute of Biotechnology of Beja, University of Jendouba, Tunisia.
- Patricia Silveyra, Associate Professor and Director, Biobehavioral Laboratory, University of North Carolina at Chapel Hill, USA.
- Yoshinori Utsumi, Research Scientist, Center for Sustainable Resource Science/Plant Genomic Network Research Team, RIKEN, Japan.
- Koen Vermeir, Associate Research Professor, Centre National de la Recherche Scientifique (CNRS), France.

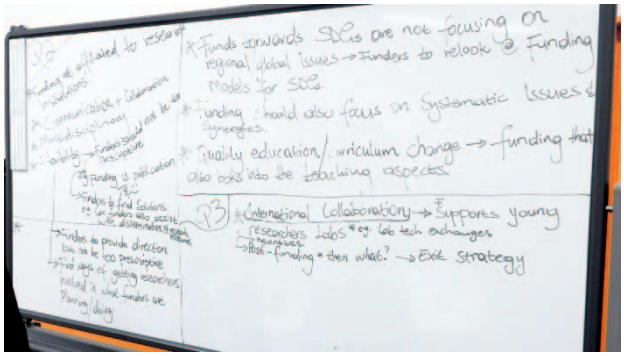
Pitch presentation by Mattheus Theodor Loots, senior lecturer at the Department of Statistics, University of Pretoria, South Africa

Pitch presentation by Norazira Abdu Rahman, doctoral student at the Department of Aquatic Bioscience, University of Tokyo, Japan

Tone-setting speech by David Sweeney, Executive Chair at Research England, UK

Table discussion

Table discussion



Results of one table discussion

Reporter: Robert Day, Department of International Affairs, JST

ID: E08C Date of Report: October 10, 2019

Towards the realization of Society 5.0 in agriculture and food production	
Session Organizer	YUYAMA Yoshito
Date & Time	October 3 1:30 PM – 3:00 PM
Location	Conference Room 202B
Number of Participants	Total: 39 (Speakers: 4, Audience: 35)

Summary of the Session

This session focused mainly on the development of AI and IoT technology toward solving various problems in agriculture and food production. Due to the aging population of farmers, we are losing valuable technologies based on the experiences and expertise of these farmers. Therefore, adjustment of the agricultural system according to acute climate change impacts, as well as AI and IoT technologies for agriculture should be established as soon as possible. As a concrete example for such technologies, the main speakers in this session introduced their latest research, which included WAGRI, an agricultural data collaboration platform, and a smart food value chain system. Their presentation titles comprised the following:

1. Dr. YUYAMA Yoshito: Society 5.0 and SDGs in Agriculture and Food Production
2. Dr. IWASAKI Nobusuke: Necessity and Expectation of AI in Agricultural Field
3. Dr. YAMANAKA Takehiko: Smartification in Agricultural Pest Management
4. Dr. YONEMARU Junichi: “Smart Breeding”, Data-driven Crop Improvement Contributes to the Realization of Society 5.0 for SDGs.

Furthermore, Professor Tofael Ahamed (University of Tsukuba) presented a lecture that focused mainly on agricultural machinery automation. The most important point raised by the audience was that such technologies may be meaningless if adopting them is too expensive for farmers. NARO scientists agreed and ensured they would generate research outcomes that would create benefit worldwide, particularly for developing countries.

This session also provided poster presentations and introduced the MIDORI Academic Prize awarded to Dr. YANO Masahiro (NARO). The titles of the poster presentations comprised the following:

1. 1-km Grid Square “Agro-Meteorological Grid Square Data (AMGSD)”
2. Supporting Agriculture Industry to Deal with Global Warming and Other Climate Changes in Robust Manner
3. Controlling Migratory Insect Pests: Migration Analysis, Prediction Technique and International Collaboration
4. A Challenge for Global Crop Forecasting
5. New Technology for Pest Control: Recruitment of Natural Enemies to Crops

Finally, Dr. Yuyama, a representative of NARO, declared NARO will contribute to the achievement of the SDGs through the realization of Society 5.0 in agriculture and food production via various collaborative activities.

Dr. IWASAKI Nobusuke (NARO)

Session overview

Dr. YAMANAKA Takehiko (NARO)

Dr. YONEMARU Junichi (NARO)

Professor Tofael Ahamed (University of Tsukuba)

Poster presentations

Reporter: KASUYA Etsuko

ID: E09C Date of Report: October 31, 2019

Emerging-electronics innovation for SDGs: Toward synergy among young researchers	
Session Organizer	National Institute of Advanced Industry Science and Technology (AIST) TIA Emerging electroniX research Alliance (TIA-EXA)
Date & Time	October 3 1:30 PM – 3:00 PM
Location	Conference Room 101
Number of the Participants	Total: 53-58 (Speakers: 8, Audience: 45-50)

Summary of the Session

Eight internationally active young leaders from a variety of electronics fields, and from Asia, Europe and America, discussed their research in the form of a panel discussion. The seven speakers introduced their work to the general public, where they focused on their collaborative work, as well as their challenges and successes. Additionally, the prospects associated with electronics for SDGs were discussed based on their extensive experience. The discussion progressed with active involvement from the audience.

The facilitator, Professor Minami (University of Tokyo), panelists (Professor Tan of the Singapore University of Technology and Design, Dr. Inoue of imec, Dr. Nishinaga of AIST, Dr. Windmiller of Biolinq, Dr. Clement of CNRS, Dr. Khanchaitit of NANOTEC and Professor Uemura of Osaka University), and the audience concluded that electronics will increase innovation in the medical technology field in relation to the health and longevity of humans—specifically, this will occur through the combination of bioelectronics and MEMS technologies (e.g., microneedles), and the development of sustainable and efficient energy circulation system through fully utilizing solar cells, photonics and integration technologies. Furthermore, activity in electronics can contribute to environmental protection by developing flexible electronics and by expanding bio- and biosensor technologies to flora and fauna.

Opening address by facilitator
Professor Minami of the University of Tokyo

Attendees

Presentation by Professor Tan of the Singapore
University of Technology and Design

Questions and comments from a young researcher

Discussion following presentation

Panelists and attendees

Reporter: Tsuyoshi Minami

Concurrent Session

ID: E10C Date of Report: October 10, 2019

Climate Change Adaptation - Promoting Regional Activity -	
Session Organizer	National Institute for Environmental Studies
Date & Time	October 3 1:30 PM – 3:00 PM
Location	Conference Room 405
Number of the Participants	Total: 52 (Speakers: 6, Audience: 46)

Summary of the Session

In this session, speakers and participants discussed how to enhance adaptation to climate change through collaboration among national and local governments, experts, and local people, and how to expand scientific knowledge obtained in one region to other regions.

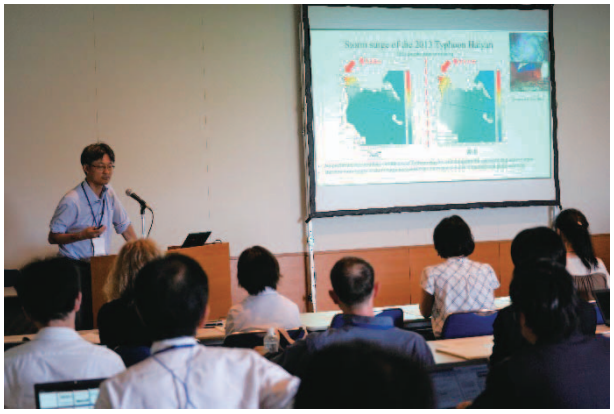
In her keynote address, Dr. Amy Luers, Executive Director of Future Earth, explained that social communication platforms and connections among stakeholders both locally and globally are essential for regional climate change adaptation and resilience. In the Q&A session that followed, the participants discussed ways to introduce Future Earth to people in developing countries, and the relationship between the UN's indices related to human networks and Future Earth's suggestion to evaluate the connection.

Following the keynote lecture, five speakers presented their work related to regional climate change adaptation. Dr. Daichi Suto from the Ministry of the Environment (MOE), Japan, introduced the recent policy development related to climate change adaptation, such as the Climate Change Adaptation Act, the National Adaptation Plan, and the Regional Adaptation Consortium. Dr. Kazutaka Oka from the National Institute for Environmental Studies (NIES), Japan, introduced information on the activities of the Center for Climate Change Adaptation (established in NIES), including the development of the Climate Change Adaptation Information Platform (A-PLAT) and the Asia-Pacific Climate Change Adaptation Information Platform (AP-PLAT). Dr. Hideo Shiogama (NIES) explained the Probabilistic Event Attribution (PEA) approach to evaluate the degree to which human influence has affected the probability and magnitude of individual extreme climate events. Dr. Takuya Togawa (NIES) introduced a framework to assess local vulnerability. This system employs socioeconomic and land-use scenarios as well as impact-chain analysis in efforts to enhance a participatory approach. Dr. Brian Johnson from the Institute for Global Environmental Strategies (IGES), Japan, reported the progress of Participatory Watershed Land-use Management (PWLM) in Laguna de Bay in the Philippines, which included participatory land-use mapping. In the Q&A session that followed, the participants discussed ways to identify indicators of local vulnerability and involve the private sector in climate change adaptation, as well as the importance of following up on local projects.

*Moderator: Dr. Yoshifumi Masago (NIES).

Keynote speech by Dr. Amy Luers, Future Earth

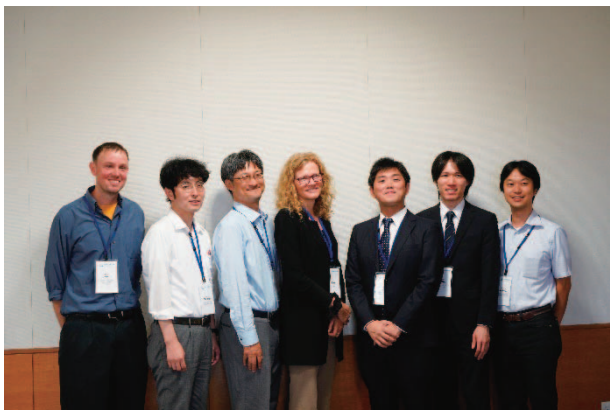
Presentation by Dr. Daichi Suto, MOE



Presentation by Dr. Hideo Shiogama, NIES

Presentation by Dr. Brian Johnson, IGES

Q&A session



Group photo of speakers

Reporter: Takahiro Oyama (NIES)

ID: E14C Date of Report: October 3, 2019

Tactics for Global Infectious Diseases Control	
Session Organizer	Hideki Hasegawa (National Institute of Infectious Diseases)
Date & Time	October 3 1:30 PM – 3:00 PM
Location	Conference Room 404
Number of the Participants	Total: 35 (Speakers: 5, Audience: 30)

Summary of the Session

The sustainable development goals (SDGs) represent an urgent call to action by all countries (both developed and developing) toward global partnership for peace and prosperity for people and the planet now and into the future. Accordingly, the SDGs were adopted by all United Nations Member States in 2015. In this session, goal three was the focus: “Ensure healthy lives and promote well-being for all at all ages by global disease control”. The organizer of this session, Hideki Hasegawa, from the National Institute of Infectious Diseases, explained that a successful linkage between the two main research settings where infectious disease research takes place (i.e., in the global field where infectious diseases actually occur and need to be dealt with, as well as at the laboratory bench where innovative strategies to control infectious diseases are developed) is essential to achieve the abovementioned goal.

In this session, we hosted speakers who are experts in infectious disease research in field settings, as well as young speakers conducting innovative virological research at the bench. From these talks, we were able to share our knowledge regarding the frontline of infectious disease research and identify current issues that hinder linkage between the global field and the bench. To begin, Professor Hirofumi Sawa (Hokkaido University) spoke on his work in virus surveillance research in wildlife, which was conducted in collaboration with the University of Zambia. He also introduced the educational system established at the Hokkaido University Research Center for Zoonosis Control aimed at training experts who could take the lead in controlling zoonoses in the global field, suggesting the importance of staff education and training to build sustainable research settings in developing countries. Following this, Dr. Meng Ling Moi (Nagasaki University) spoke on her latest serological research work on arbovirus, which was conducted using specimens collected in Japan and Vietnam. She emphasized the difficulty of maintaining and storing samples as well as the collection of samples in developing countries due to the lack of sufficient knowledge and resources. She also emphasized the importance of staff training, material sharing, and information exchange between international groups toward successful international research collaboration. Dr. Takao Hashiguchi (Kyushu University) spoke on his frontline research in the field of molecular virology, which combines virology with structural biology. His research demonstrates that protein analysis at micro-level resolution can reveal virus infection mechanisms and observations useful in developing effective therapeutics. Dr. Takasuke Fukuhara (Osaka University) introduced his recent research on flaviviruses, which utilizes nanoluc technologies. He demonstrated how cutting-edge technologies can be useful in evaluating viral dynamics and

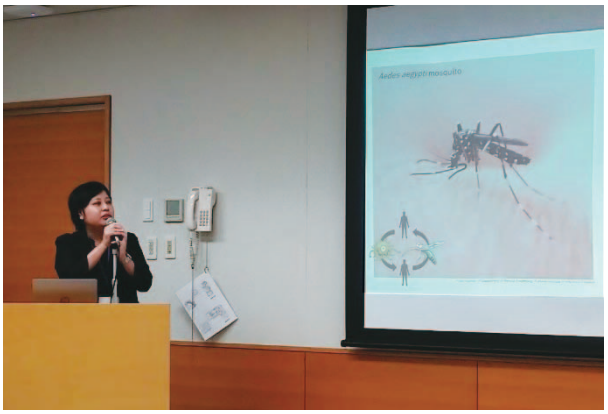
developing novel diagnostic methods. Finally, Professor William Hall (University College, Dublin) shared his experience in conducting international arbovirus research with multiple countries and introduced tactics that either did or did not work in developing global collaborative research bases. He emphasized the key to successful international research collaboration is sustainability, in addition to providing on-site infrastructure and staff training in research.

At the conclusion of this session, we discussed current issues which need solutions in order to develop efficient bench-to-field tactics for infectious disease control to achieve the SDGs. Dr. Hiroyuki Yamamoto (National Institute of Infectious Diseases) served as the moderator of this discussion. During the discussion, it was stated the current challenge in global infectious disease research and control is catching up with the technical and infrastructural needs that are rapidly changing in the field. *In vitro* bench studies enable the development of innovative diagnostic strategies. However, although the data obtained in these sophisticated *in vitro* studies is highly informative, these studies cannot be easily implemented in current field settings. For example, although a lot of important data can be obtained from protein-based analysis at the bench, it must be admitted the best diagnostic method for infectious diseases in the field to date continues to be that which is nucleic-acid-based, which is due to the lack of technology to stabilize protein specimens in the field. Therefore, further research in the field of protein biology may lead to a major breakthrough in the field of infectious disease research. Additionally, this breakthrough could potentially be beneficial in also advancing other scientific research fields. Thus, it was suggested more support and effort should be made in the research field of protein biology.

Additionally, one of the most frequently cited keywords in this session was ‘sustainability’. In order to control global infectious diseases, a successful international collaboration is essential, and building a sustainable research environment by training staff and implementing infrastructure development is important. However, the immediate establishment of such a sustainable system is impossible. A possible solution for this issue was suggested by Dr Yamamoto, who shared the story of Nicolas Bourbaki (i.e., a group of mathematicians who aimed to reformulate mathematics in the 1930s). Although the direct influence of Bourbaki on mathematics has decreased over time, it is said his work has had a strong and lasting impact on mathematics to date. This story indicates that, for the time being, a research environment that would serve as a starting point to establish an ideal sustainable research platform in the future should be built through a collaborative effort made by experts who are currently involved in infectious disease research. Although the research platform to be built may not be complete from the beginning, it may well be refined in the future. What is important is to act now in order to impact the future of this research field and to accomplish the SDGs.

From left: Discussion moderator, Dr. Hiroyuki Yamamoto (NIID); Dr. Meng Ling Moi (Nagasaki University); Professor William Hall (University College Dublin); and session organizer, Hideki Hasegawa (NIID).

Spotlight talk: Professor Hirofumi Sawa (Hokkaido University)



Short talk: Dr. Meng Ling Moi (Nagasaki University)

Short talk: Dr. Takao Hashiguchi (Kyushu University)

Short talk: Dr. Takasuke Fukuhara (Osaka University)

Spotlight talk: Professor William Hall (University College Dublin)

Reporter: Kaori Sano (National Institute of Infectious Diseases)

ID: E17C Date of Report: October 31, 2019

How perfect is the SDGs? - Reconsideration of SDGs from the viewpoint of inclusiveness and "immiscible" science advices	
Session Organizer	Young Academy of Japan/Global Young Academy
Date & Time	October 3 1:30PM – 3:00PM
Location	Convention Hall 200
Number of the Participants	Total: 47 (Speakers: 7, Audience: 40)

Summary of the Session

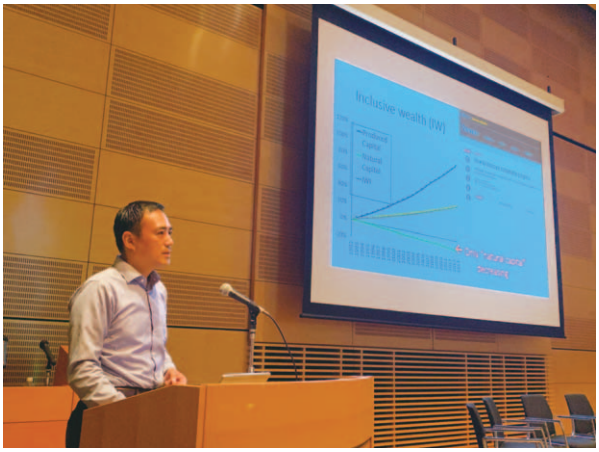
The session commenced with presentations by our guest speakers. The theme underpinning all of the presentations pertained to the contributions science and scientists can make to society. The specific issues presented therein were as follows: (1) the light and shadow of new technologies, with the example of plastic materials; (2) support on scholar refugees; (3) the evaluation of value and possible use of economic tools; and (4) advice regarding science. The discussion that followed predominantly focused on society's trust of science and scientists. The following points were approached:

– Communication is the key.
– Challenges pertain to how the scientific community could overcome bias in societies regarding science (e.g., as was observed following the accident at the Fukushima Nuclear Power Plant). Specifically, often citizens feel they do not have access to academic resources.
– How young students/researchers can be more inclusive and acquire skills in leadership and delivering science advice.

The key messages upon conclusion of the discussion comprised the following:

– To improve society, scientists are responsible for the distribution of science-based evidence to members of government and citizens in a manner such individuals can comprehend and feel confident in. Toward this aim, scientists are required to make more of an effort to improve their communication skills and capacity.
– The leadership skills of scientists should be developed early in their careers, not only through attendance at relevant workshops, but also through engaging in science advice in their practice.

Speaking from two different perspectives



Introducing inclusive wealth

Q&A session 1

Q&A session 2

Discussion

Speakers and moderators

Reporter: Kazuyoshi Nishijima

ID: E20C Date of Report: November 21, 2019

Design Science for Future Society Design	
Session Organizer	The University of Tokyo
Date & Time	October 3 1:30 PM – 3:00 PM
Location	Conference Room 304
Number of the Participants	Total: 21 (Speakers: 11, Audience: 10)

Summary of the Session

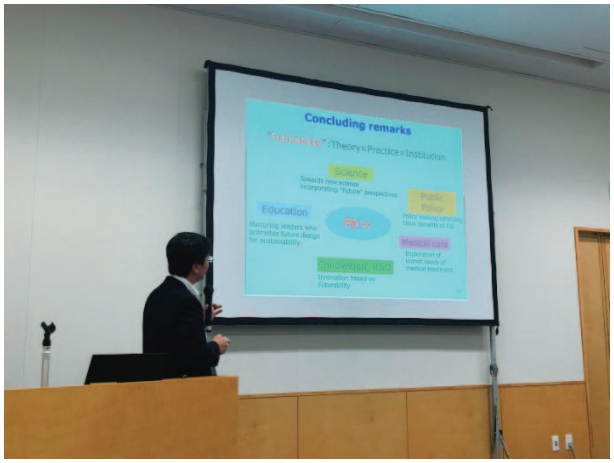
Throughout the last century, social problems, including increasing environmental burdens and debt imbalances occurred (and continue to occur), which means there existed a lack of future design in the last century. We are now at a turning point where we need to take on the responsibility to create a brighter future for coming generations. Humans by nature have a tendency toward optimism and short-sightedness, as studies of brain function and psychology have elucidated. To resolve the issue, we need a science of design for the design of our future society, which we have not seen to date but which relies and focuses on normative perspectives.

In particular, people's social lives are embedded in materials such as housing, buildings and social infrastructure, all of which influence our thought and life since materials last long after our individual lives end. These materials are highly path-dependent and stick to institutions. Even in terms of our current material supply, gaps in supply and demand exist both in terms of quantity and quality (especially with respect to supply by the public sector). The question remains: How are we to meet and maintain this for coming generations? Specifically, personal social services will likely become indispensable in attempts to solve these issues.

In addition to the design of future society itself, the design of design processes should essentially include 'imaginary future generations' as well as activate futurability in every sector (e.g., urban design, community design, policy design, arts and cultural heritage systems). Designing is an enquiry and communication process. We believe our capabilities and continued humanity rely on the empathy we forge between current and future generations.

Accordingly, transition management from the current system is needed. Scientists must bridge different layers in terms of theories, and institutions to practices with case-based detailed insights and actions; however, this should not remain on a single layer. We need to pursue both academic innovations and social impacts, as well as creativity and reversibility in terms of logic, ethics and aesthetics. Additionally, we must note that the transition process is path-dependent and this path is usually quite different among developed and developing countries.

Data has become an exchangeable resource and data exchange and design will be cutting-edge issues in society in the future. It is important we demonstrate greater concern toward society with digital technology from disruption innovation to responsibility, where tech startups utilizing this technology will definitely play an important role in realizing society into the future.



Plenary talk

Short talk

Following the session

Reporter: Yuya Kajikawa, The University of Tokyo

ID: N02C Date of Report: October 29, 2019

Creating a Sustainable Democracy and a New Public Sphere in Society 5.0	
Session Organizer	Yuko Yoshida
Date & Time	October 3 1:30 PM – 3:00 PM
Location	Conference Room 201A
Number of the Participants	Total: 41 (Speakers: 4, Audience: 37)

Summary of the Session

In the beginning, the team received a keynote address from the President of the University of Tsukuba. He encouraged the team by introducing that current information science was orignally born from library infomation science.

Dr. Masanori Koizumi (Faculty of Library, Information and Media Science, University of Tsukuba) spoke on social issues in the democratic public sphere (e.g., problems associated with an increase in the immigrant population in the EU, and the problem of the quality of information accessed via the Internet, which represents an important part of the public sphere). To respond to such problems, Dr. Jamie Johnston (Oslo Metropolitan University, Norway) introduced the case of the Language Café as providing immigrant support and the positive effect it has had in the Nordic Norwegian Public Library. Additionally, Dr. Michael Widdersheim (Emporia State University, United States) discussed the formation of information in the public sphere.

While the democratic public sphere allows citizens to speak openly, share information, and acquire knowledge, the increase in immigration numbers and migration worldwide has created a reality in which language barriers have become a barrier to the access of information. Additionally, the Internet, which represents a significant part of the world's public sphere, generated fake news events (e.g., the US presidential election). Moreover, time is needed for the voices of minority groups to be heard in society and to become integral in positive social change. In this context, public libraries (which occupy a part of the public sphere) are experiencing a revolution in which they are becoming important places for resolving social issues. The public library is also a place of communication between two or more ethnic groups, and it is a place where information, culture, and technology are transmitted. Furthermore, it is a place where citizens gather together. Accordingly, the questions of what we think and what we should do about the state of information in society were posed by Dr. Koizumi.

In society, there are groups that are left behind and isolated from the public sphere. People who leave their hometowns and countries and live as minorities in host regions often experience a completely foreign society and culture. In recent years in particular, many migrants and asylum seekers have been accepted across countries in Europe. If limited to no information exchange can be created through dialogue between individuals from diverse ethnic and linguistic backgrounds, it is not possible for those individuals to cultivate a sense of belonging within the public sphere. In Scandinavia, public libraries are working on this social issue and attempting to create opportunities for dialogue between minority and majority groups. This social enterprise is called the Language Café, which is operated by volunteers from the country and migrants who have since been able to create a

stable life for themselves through this enterprise. In the Language Café, as well as through language classes, life and career counseling are provided. It is not only migrants who can obtain benefits through this activity, but also those who belong to the local community can deepen their understanding of other ethnicities and cultures. According to Dr. Johnston, such exchange benefits both minority and majority individuals.

In information exchange there exists an invisible part termed a 'blindspot'. Dr. Widdersheim discussed about it. Society 5.0, for example, aims to build a livable society by maximizing our technical capabilities to apply to various social issues. What is the invisible component of this message? These are, for example, technological dependence, the idea of economic centrism, government policies, how personal information is collected, and how information is chosen and distributed (among others). In other words, the information recipient should pay attention to what's there behind the message, for example, Society 5.0. For another example, breaking news does not always provide the correct information in terms of quality. What is important in the public sphere is that necessary information is accessible for all though, it is also necessary to pay attention to any filtering process to which information may be subject. Policies should reflect the needs of the people and associated decisions should not be forced upon people. Such notions make us aware that it is necessary to understand where information comes from and how it is presented. The public library in the public sphere is an organization that realizes the "legitimate management of information", "maintaining the public nature of information", and "collecting and providing information under the law order". As Dr Widdersheim explained, the use of a public library may represent greater understanding toward the meaning and value of information.

During the session, one participant impressed the issue of the volunteerism available within societies, where he worried about the gap between Nordic societies and Japanese realities in this respect. Additionally, the issue of support for migrants is no longer an external matter; Japanese society depends on a large foreign workforce. Several other participants expressed they had reached a renewed perception regarding their understanding of information following the session.

In conclusion, it was a meaningful session, where a place to share international, expert knowledge on social issues was made available.

Member introduction

Greetings from President Nagata
(University of Tsukuba)

Audience

Team photo with our Dean

Smiling members

Reporter: Kishiko Itoh

ID: N03C Date of Report: October 31, 2019

Disaster Resilience, Human Factors, Cyber Resilience toward Realization of Resilience Society	
Session Organizer	Yuichiro Usuda
Date & Time	October 3 1:30 PM – 3:00 PM
Place	Conference Room 201B
Number of the Participants	Total: 46 (Speakers: 4, Audience: 42)

Summary of the Session

This session was hosted by four institutions that were participants in the Resilience Research and Education Promotion Consortium: SECOM Company Ltd. (Japan), the National Research Institute for Earth Science and Disaster Resilience (Japan), the National Science and Technology Center for Disaster Reduction (Taiwan), and the University of Tsukuba (Japan).

To begin, Dr. Yasunori Endo extended his greetings and Dr. Yuichiro Usuda briefly explained the purpose of the session.

Second, three presentations (below) were delivered:

- ✓ Dr. Chi-Wen Chen: “Mass Movement Warning System in Taiwan Using Soil Water Index.”
- ✓ Mr. Husam Muslim: “Human Factors Solutions for Improving Human Interaction with Automation.”
- ✓ Dr. Masaki Shimaoka: “Cybersecurity toward Resilient Social Infrastructure.”

Following these presentations there was a discussion and the following concepts/themes were approached:.

- ✓ To achieve a society resilient against severe disasters (and their prevention), risk and vulnerability assessment, monitoring and early-warning systems, reliable and timely knowledge, and systematic preparation are crucial factors.
- ✓ In a human-centered design, users must understand the use of automatic systems, users’ strong skills must be secured, and users must stay in the control loop. In situations where machines cannot handle the workload or complexity of a situation required, humans must know how to respond quickly and appropriately.
- ✓ A cyberspace society needs to consider factors such as the presence of malicious users and unintentional attackers. To realize cyber resilience, it is important to evaluate risks that threaten security and safety, and to understand business-environment systems as well as changes over time.
- ✓ The situation of resilience in each field is diverse. In a system with diverse membership, assumptions can rapidly change. The realization of a society that is resilient against a diverse range of threats is difficult to achieve, but this is an urgent issue.

Greetings by Dr. Yasunori Endo

Presentation by Dr. Chi-Wen Chen

Presentation by Mr. Husam Muslim

Presentation by Dr. Masaki Shimaoka

Conclusion by Dr. Yuichiro Usuda

Group photo by participants

Reporter: Yuichiro Usuda

ID: N06C Date of Report: October 28, 2019

How can we think about securing foods in the world using biotechnology crops?	
Session Organizer	Hiroshi Ezura (Tsukuba-Plant Innovation Research Center, University of Tsukuba)
Date & Time	October 3 1:30 PM – 3:00 PM
Place	Conference Room 102
Number of the Participants	Total: 93 (Speakers: 4, Audience: 89)

Summary of the Session

The Tsukuba-Plant Innovation Research Center (T-PIRC) organized this session. First, four guest scientists and experts in the field presented lectures on the current progress of biotechnology, and the production of biotech crops and their regulation in Japan, Europe and USA. The names of the guest speakers and their respective presentation titles are given below:

Hiroshi Ezura: Director of T-PIRC, University of Tsukuba, “Are Biotech Crops Becoming “a Savior” for Food Security?”
Scott Herndon: Vice President and General Counsel, American Sugarbeet Growers Association, “Importance of Agricultural Biotechnology for the United States Sugarbeet Industry”.
Thorben Sprink: Julius Kühn-Institut, Federal Research Center for Cultivated Plants,
“New Breeding Technologies: Trapped between Innovation and Regulation”.
Makiko Matsuo: Project Assistant Professor, Graduate School of Public Policy, University of Tokyo, “Genome Editing in Food and Agricultural Sector: The Recent Development in the Japanese Context”.

Following these presentations, **Emi Gamo** (Expert Advisor, Nippon Association of Consumer Specialists) served as a moderator for the panel discussion, where speakers and audience members discussed how recent progress in biotechnology can contribute to the worldwide problem of sustainable food production and how the application of biotechnology can lead to social license.

Speakers

Lecture session

Emi Gamo

Panel discussion

Scott Herndon

Reporter: Takuya Suzaki

Concurrent Session

ID: N17C Date of Report: October 28, 2019

Developing a Global Networking System in Medicine	
Session Organizer	Yuji HIRAMATSU
Date & Time	October 3 1:30 PM – 3:00 PM
Location	Conference Room 406
Number of the Participants	Total: 47 (Speakers: 7, Audience: 40)

Summary of the Session

- The importance of radiotherapy was emphasized on the University of Tsukuba Hospital side.
- The Santa Cruz Hospital is considering two-phase Proton Beam Therapy: the first phase is medical tourism and the second is the introduction of the radiotherapy system of its own.
- There are several problems concerning, for example, finance, travel and time, and choice of appropriate treatment for each patient before their arrival at the University of Tsukuba Hospital.
- The SC Hospital is keen to introduce Proton Beam Therapy with the assistance of the Japanese Government.
- In Brazil (unlike in Japan), there are patients from various ethnic backgrounds, which has important implications for bilateral cooperation. Caucasian patients with ocular melanoma, for example, would benefit more from receiving treatment in either Europe or Northern America (i.e., not in Japan).
- There are two phases in bilateral cooperation concerning Proton Beam Therapy, according to which the role of the University of Tsukuba Hospital shifts.
- There should be opportunities where potential patients can explore their treatment options and which treatment is right for them prior to arranging a medical trip to Japan.
- Long-term planning is necessary as the relationship between the two hospitals will likely change over time.

SpeakersWelcome address

Presentation

Presentation

Panel discussion

Q&A Session

Q&A Session

Reporter:　Yasushi UCHIYAMADA

ID: N19C Date of Report: November 12, 2019

To nurture entrepreneurship continuously, university initiated platform creating outbound open innovation can really work or not.

Session Organizer	The Business-University Forum of Japan
Date & Time	October 3 1:30 PM – 3:00 PM
Location	Conference Room 202A
Number of the Participants	Total: 27 (Speakers: 5, Audience: 22)

Summary of the Session

In Japan 30 years ago, it was expected that, if we built a mechanism (e.g., an organization such as the Engineering Research Center of National Science Foundation in the U.S.), the technology from such foundational research could naturally flow into business fields in the form of social implementation. However, to date, no such mechanism has been developed to achieve this desired flow. Therefore, an understanding of new structures such as “Center of Innovation”, which is a project-based consortium linking the research and business sectors, is being promoted.

Intelligence derived from such foundational research does not directly result in business as commercialization; rather, it is an “interpreter” that can associate (tying) with the business to be focused on (i.e., outside of the stated mechanism). Shared personal contributions to the society should assume a higher position, above that which extends from the egoism of an organization.

Accordingly, each researcher’s imagination may lead them to destinations as commercialization, comprising their newly derived intelligence.

It is extremely important for individuals, especially young researchers, to continuously consider beyond the fields in which they work how intelligence can activate and visualize social needs in series.

For the conclusion of this session, consideration was given to the question of how to nurture strong-willed individuals as “interpreters” in universities so that platforms such as COI can be initiated.

(Note: S. Kohara of BUF Office is responsible for this article)

Reporter: Satoshi Kohara

ID: N24X Date of Report: November 22, 2019

Tsukuba Scientific English Conference (TSEC) 2019	
Session Organizer	Thomas Mayers & Tadachika Koganezawa
Date & Time	[Day 1] October 3 10:00 AM – 5:00 PM [Day 2] October 4 2:45 PM – 3:45 PM
Location	[Day 1 (October 3)] University of Tsukuba (8th floor, Health and Medical Science Innovation Building, Medical Area, Tsukuba Campus) [Day 2 (October 4)] Conference Room 406, Tsukuba International Congress Center Note: The second day of this session was held as part of the special session "Student Presentation" (ID: N12S, see pp.107 – 108 for further information).
Number of the Participants	Total: 173 (Speakers: 13, Audience: 160)

Summary of the Session

The first Tsukuba Scientific English Conference (TSEC) was held over two days at two locations as a satellite event of Tsukuba Conference. The main purpose of the conference was to assist participants to improve their scientific English skills through a range of practical talks from international experts, educators, professionals, and students. A secondary purpose was to help create a network of people interested in this topic. Across the two days, the presentations took the form of two basic categories: five student presentations (15 minutes in length) and seven faculty presentations (30–45 minutes in length; a full list of the speakers and presentation titles is given in Table 1). The keynote presentation by Professor Surr from Leeds Beckett University, focused on the role of clinicians and patients in designing and conducting research in the UK. Professor Miyamasu, Professor Langham, Dr. Weisburd, Dr. Mathis, and Dr. Millar all delivered educational talks on the topic of various aspects of scientific English (e.g., writing and presentation). A number of the talks touched on the issue of diversity and gender equality in accordance with number 5 of the United Nation's Sustainable Development Goals. Accordingly, three of the faculty (3/5) and two of the student presenters (2/5) were female, and one identifies as LGBT+. Additionally, the 13 presenters represented seven different nations: Japan, Malawi, Kenya, Greece, India, the UK, and the USA. The conference also became an opportunity for students to discuss issues faced by Japanese students studying overseas and international students in Japan. In conclusion, TSEC was successful in fulfilling its educational and networking purposes and, according to questionnaire data gathered after the conference, was enjoyed by all participants in attendance.

Table 1: List of speakers, titles and numbers of attendees for TSEC 2019.

Date	Presenter	Affiliation	Title	No. people
October 3rd	Prof. Claire Surr	Leeds Beckett University	*Health Research: The Important Role of Clinicians and Patients*	90
	Vishal Gor	University of Tsukuba	*Expanding Horizons: My Experiences as a Graduate Student in Japan*	
	Yuka Endo	University of Tsukuba	*Be Positive, Be Confident, and Do Not Hesitate: Some Tips for Non-Native English Speakers*	
	Chrispin Mahala Manda	University of Tsukuba	Research Experiences, Opportunities, and Scientific Communication in Japan: A Perspective of an African Student	
	Christina Andrea Sylvia	University of Tsukuba	*University Students' Mental Health and International Students' Acculturation*	
	Prof. Clive Langham	Nihon University School of Dentistry	*Presentation Skills: How to Handle the Question and Answer Session*	
	Dr. Rick Weisburd	ELSS Inc.	*Effective Assertions in Research Writing*	
	Dr. Yuta Taniguchi	University of Tsukuba Hospital	*3 Tips to Make Your English Communication More Productive and Pleasant*	
	Prof. Flaminia Miyamasu	University of Tsukuba	Common Mistakes in Scientific English	
	Gopakumar Changarathil	University of Tsukuba	Striving for Diversity and Excellence in Science: Experiences of a Graduate Student	
	Prof. Hiromi Yanagisawa	University of Tsukuba	Lessons from the Reverse Culture Shock: My 24 Years of Experience in the US Research Institution	
October 4th	Prof. Neil Millar	University of Tsukuba	Five Steps to Prepare an Amazing Presentation	83
	Prof. Bryan Mathis	University of Tsukuba	English Tips for Poster Presentations	
	Prof. Claire Surr	Leeds Beckett University	Comments and Feedback	

Professor Claire Surr,
Leeds Beckett University (UK)

Chrispin Mahala Manda, University of Tsukuba

Audience enjoying the talks

A truly international experience

Professor Hiromi Yanagisawa,
University of Tsukuba

Dr. Gopakumar Changarathil,
University of Tsukuba

Reporter: Thomas Mayers

Special Session

ID: W01S Date of Report: November 5, 2019

Lecture by the President of the World Cultural Council “One Health. The Future Challenge for Medical Research”	
Session Organizer	World Cultural Council; University of Tsukuba
Date & Time	October 3 5:15 PM – 6:15 PM
Location	Convention Hall 300
Number of the Participants	Total: 61 (Speaker: 1, Audience: 60)

Summary of the Session

Professor Sir Colin Blakemore, President of WCC, delivered a special lecture on the future of medical research, which was then followed by a Q&A session.
The key messages of this presentation and discussion are as follows:
Modern medicine is founded on many disciplines, including biomedical sciences, genetics and genomics, epidemiology and social sciences. However, the new concept of One Health, embracing the complexity of food chains and ecosystems as well as veterinary and human medicine, demands a commitment to interdisciplinary research unprecedented in scale. Knowledge of neuroscience, developmental biology, molecular genetics, anthropology, public engagement, psychology, food science and government policy were essential toward an understanding of disorders such as Nipah Virus, Mad Cow Disease (bovine spongiform encephalopathy), transmission of the rabies virus, and the aetiology of amblyopia ex anopsia (‘lazy eye’), and, furthermore, for designing strategies for the treatment and/or prevention of such disorders. Accordingly, research in One Health will require new approaches to nurture interdisciplinarity.

Professor Blakemore’s lecture

Professor Blakemore’s lecture - II

The audience

A question from the audience

Reporter: Mahdi Katsumata Shah

DAY 3

October 4 (Fri.)

Special sessions (open to the public)

Special Session

ID: E11S Date of Report: November 7, 2019

Achieving Society 5.0 and Mobility Network with digital innovation	
Session Organizer	JAPIC: Japan Project-Industry Council Keidanren: Japan Business Federation
Date & Time	October 4 1:30 PM – 3:30 PM
Location	Convention Hall 200
Number of the Participants	Total: 206 (Speakers: 6 persons (including coordinator), Audience: 200 persons)

Summary of the Session

Five panelists from Japan and Finland delivered presentations on the Mobility Network and MaaS, both of which have occurred in academia as well as in the public and industry sectors. The following themes were approached:

(1) The current evaluation concerning Society 5.0 and MaaS in Japan.
(2) Challenges, barriers, and measures toward the realization of our vision.
(3) What will Japanese society look like in 2050, after the development of Society 5.0 and MaaS?

Furthermore, we discussed the superiority of Mobility Network and concerns regarding open data between Japan and the world.

The following conclusions were made:

① Japan is capable of progressing towards its vision. Accordingly, we require system architecture, which incorporates how to execute our goals and make our vision tangible. This is difficult, as often our attempts progress only as far as creating a vision without generating any tangible outcomes. Therefore, the question of how to solve data linkage between the public and private sectors is an extremely important one.

② If we do not adequately impress upon people the importance of the realization of our vision from a grassroots level upwards towards securing human happiness, we will not obtain the future we hope for beyond 2050—this is our conclusion.

The audience at this session totaled 200 and many asked questions regarding the topics explored. It was an extremely valuable and promising session.

Reporter:　Hiroyuki Marukawa

Special Session

ID: E16S Date of Report: November 23, 2019

Tokyo University of the Arts Extension Program Diversity on the Arts Project	
Session Organizer	Hibino Katsuhiko
Date & Time	October 4 1:30 PM – 3:00 PM
Location	Conference Room 403
Number of the Participants	Total: 19 (Speakers: 7, Audience: 12)

Summary of the Session

On the theme *Art x Welfare*, the Diversity on the Arts Project (DOOR) seeks to nurture talent that will lay the groundwork for a society inclusive of all types of people.
As our lecturers, we welcomed experts from a variety of fields who seek to reinterpret ‘welfare’ from a broader perspective—specifically, artists who create and share work in dialogue with people, localities, and contemporary society, as well as those who feel some sense of incongruity in the reactions and responses they have received from the modern world. Such artists work toward developing curricula that are at once systematic and unique, while expanding the mutual operations of disciplines blending welfare and the arts.
During the session, the DOOR staff and current students introduced the classes currently undertaken at DOOR and presented their new projects.

Reporter: Tanaka Ippei

ID: E18S Date of Report: October 31, 2019

G7 Young Scientist Meeting: Citizen science for updating "science" in the SDG era	
Session Organizer	Young Academy of Japan, Global Young Academy
Date & Time	October 4 9:00 AM – 12:00 PM
Location	Multi-Purpose Hall
Number of the Participants	Total: 61 (Speakers: 11, Audience: 50)

Summary of the Session

The session consisted mainly of two different parts. First, speakers gave brief speeches and the audience sent their comments and/or questions using the online system *Slido*. In the second part, we had six tables for discussion, inviting audience members as discussants.

In the first part, following a brief explanation of the session outline by Dr. Kishimura, Dr. Shimpuku briefly introduced the G7 Science Academies 2019 summit as a participant of the meeting and shared key points of the discussion regarding the topic, 'Citizen science in the Internet era'. Next, Dr. Nakamura delivered an overview of citizen science from his expert viewpoint, basing his presentation on some important examples. Dr. Kishimura presented the summary of discussion on citizen science in YAJ and shared some unique Japanese projects pertaining to citizen science. Following this, several other panelists spoke about related citizen science activities occurring in their respective countries. As a related topic, Dr. Iwasaki introduced key points of the discussion on 'Science and trust' in the G7 Science Academies 2019 summit. Finally, several questions that were raised in the *Slido* system were selected and a discussion ensued.

In the second part, we assigned six different topics to each table: **Table A.** Citizen science in the local area; **Table B.** Funding and human resources for promotion of citizen science; **Table C.** Education for promotion of citizen science; **Table D.** How to create place and opportunity for citizen science; **Table E.** Future direction of citizen science (including some lessons from NicoNicoGakkai *β* and **Table F.** The role of professional scientists in citizen science.

A brief summary of the discussions for each table is as follows:

Table A. Flat communication between citizens and scientists is essential, particularly in the local situation. Raising issues from citizens and providing opportunities for scientists are important.

Table B. Setting up an improved framework for funding, utilization of internet-based schools (e.g., N high school in Japan), and cooperation with professional researchers are essential. Additionally, incentives (or co-benefits) for participation are important.

Table C. The promotion of active learning and fostering science communicators can be a good support for citizen science. Furthermore, the promotion of open science and crowd-sourcing is helpful.

Table D. From the viewpoint of cost effectiveness, SNSs may provide the best platform to host citizen science activity because it does not require initial investments. Moreover, SNSs can operate as a channel among citizens, scientists, and sometimes local governments.

Table E. From the experiences of NicoNicoGakkai, fostering independent researchers is one promising way to promote citizen science. According to Dr. Eto, one of the founders of NicoNicoGakkai, one original purpose was the expansion and establishment of funding to independent studies, but this has not yet been achieved. Additionally, science communication such as NicoNicoGakkai is useful for professional scientists in terms of increasing funding opportunities and enhancing their reputations. To this end, scientists need to convey their passion to the general public in a more proper manner. To promote citizen science, an evaluation indicator is considered to be important. One of the most useful indicators is how many participants regularly join a program. Measuring how much 'fun' participants are having is also another important factor.

Table F. Ideally, it will be most beneficial to prepare for open-source publications to ensure opportunity and support for citizens. However, we should also consider the credibility and quality of citizen science. People can easily make mistakes and can often be biased; consequently, a proportion of citizen science will include extreme arguments and/or incorrect data collection. This may easily lead to a loss of trust in science. Therefore, 'professional scientists' are required to take the role of 'mentor' but not 'ruler'. As a mentor, scientists can give advice to maintain the quality of science and to produce greater scientific knowledge for citizens. This type of co-creative science is our desired aim for citizen science.

The venue

Moderators and speakers

Dr. Masaki Nakamura

Dr. Nishijima & Slido

Roundtable discussion

Summary report

Reporter: Akihiro Kishimura

ID: E21S Date of Report: December 11, 2019

Virtual Artist IA, Film Concert Screening	
Session Organizer	1st PLACE Co., Ltd.
Date & Time	October 4 1:30 PM – 3:00 PM
Location	Main Convention Hall
Number of the Participants	Total: Unspecified (Speakers: – , Audience: –)

Summary of the Session

At the Tsukuba Conference, the virtual artist IA (along with four real dancers) delivered the opening act, performing the track “The Eternity and More”.

To provide a better panoramic view of IA’s performance and to showcase the enthusiasm generated by entertainment when it is accompanied by technology, a screening of the digest version of IA’s live shows from approximately 2018–2019 was run alongside the performance.

■ *IA (pronounced as Eeh-ah)*:
IA is not a vocaloid; she is something better: a virtual artist produced by 1st PLACE Co. Ltd. of Tokyo, Japan. Her voice, based on that of Lia (a renowned vocalist who performs songs from animations) is generated via speech synthesis software.
She is a globally active music artist, having successfully toured in 12 cities worldwide. She is an esteemed performer in the music industry and many famous artists from major genres are providing her music, including SUGIZO (LUNA SEA/X JAPAN), Shinichi Osawa (MONDO GROSSO), KOHH and TeddyLoid.

IA’s main achievements:
- Served as an image girl for Japan’s largest car race, SUPER GT (2013, 2014).
- Performed a song which featured in the anime series *Mekakucity Actors* (2014).
- Completed a world tour across 12 cities entitled “PARTY A GO-GO” (2015–2018).
- Her *PARTY A GO-GO* live concert was featured as a film concert across more than 300 cities, in front of over 90,000 people (2015–2018).
- Performed at “Bilibili Macro Link 2017”, which was viewed simultaneously throughout the world by a record-breaking 720,000 people (2017).
- Served as the ambassador to the 30th International Olympiad in Informatics (IOI), which hosted participants from 87 countries (2018).
- Performed at an event where virtual space and real space coexist, which was sponsored by ATL-MR (2019).
- Served as a virtual attendant at one of Tokyo’s busiest train stations (i.e., JR Ueno station), helping to direct thousands of passengers each day to their respective destinations (2019).

- Delivered a guest performance at the technology and music festival, *J-WAVE INNOVATION WORLD FESTA 2019* (2019).

In the summer of 2018, IA began her latest world tour, which featured her most recent live show, “ARIA”, which is a new type of live entertainment show that combines art, technology and music. In June 2018, IA’s pre-performance at the Digital Art Festival held in Enghien-les-Bains, France, received high critical acclaim across more than 20 French media outlets, including national TV. The first performance held at DMM VR Theater Yokohama in January, 2019, which took place over a 2-day period, was sold out for all four scheduled shows.

Reporter: 1st PLACE Co., Ltd.

Special Session

ID: E22S Date of Report: November 11, 2019

Initiatives for active and creative learning	
Session Organizer	Toru Kodama (Associate Professor, University of Tsukuba)
Date & Time	October 4 1:30 PM – 4:00 PM
Location	Conference Room 101
Number of the Participants	16 speakers. 70 people in the audience.

Summary of the Session

This session was held under the partnership between N High School, a Japanese high school which is run by Kadokawa Dwango Education Institute, Tsukuba Graduate Students' Network (TGN) and J-Wave. This session consisted of the following four talk sessions, and all of them were successfully conducted with the aim of discussing how active and creative learning should be promoted in the Japanese education system.

The first talk session was conducted by Mr. Shinichi Yamanaka, President of Kadokawa Dwango Education Institute. He explained about the school's diverse educational programs for active and creative learning and several examples of achievements it made through those programs.

Then, in the second session, under the moderation of Mr. Takeru Suzuki of Kadokawa Dwango Education Institute, five pitches were made by selected student groups from N High School in relation to their ongoing business and entrepreneurship projects. Five commentators, including Professor Yoichi Ochiai at the University of Tsukuba, Mr. Tom Kawada, a renowned product inventor, and Mr. Kuniyasu Komukai, General Manager at J-Wave, provided their advice and suggestions regarding each of the pitches.

In the third session, while being based on their own experiences in science communication and creative learning projects, Ms. Sato Sanai and Mr. Toshiyuki Aoyama from TGN led discussions with other discussants from N High School and J-Wave on various topics in regard to how active and creative learning schemes should be created and facilitated in high schools as well as in universities for the benefit of society at large.

In the fourth session, Mr. Takanobu Kamikihara, Vice-President of N High School and Mr. Tom Kawada had a dialogue about the importance of active and creative learning as well as several obstacles that exist in the current Japanese education system for the furtherance of active and creative learning and how to overcome those obstacles.

All the four sessions were live-streamed through live-streaming services provided by Niconico Douga. The fourth session was recorded by J-Wave and is to be broadcasted within its radio program in due course of time.

Presentation by N High School students

Presentation by N High School students

Presentation by TGN

Panel discussion in the third session

Group photo

Reporter: Toru Kodama

Special Session

ID: N05S Date of Report: October 28, 2019

IoT and AI in Agriculture: Self Sufficiency in Food Production to Achieve Society 5.0 and SDG's Globally	
Session Organizer	Tofael Ahamed
Date & Time	October 4 9:00 AM – 4:30 PM
Location	Conference Room 303
Number of the Participants	Total: 64 (Speakers: 10, Audience: 54)

Summary of the Session

The program was successfully organized to include guest speakers from the University of Illinois, Kasetsart University, Universiti Putra Malaysia, Murdoch University, Bogor Agricultural University, the University of Tsukuba, the Pundra University of Science and Technology, Kyushu University, ICHARM and the Tokyo University of Agriculture and Technology, where they shared their expertise and experiences with the participants and students in attendance, especially that related to the development of IoT and AI in agriculture in their respective countries. Professor Tosiharu Enomae, Chair of the Doctorial Program of Appropriate Technology and Sciences for Sustainable Development, delivered the welcome address to begin the session and to highlight its significance. Throughout the presentation, the speakers shared their knowledge of IT-based traceability systems for food production, IoT-based urban water management, engineering solutions for reducing post-harvest losses, integration of multi-platform data as an early warning system, the application of satellite remote sensing and in-situ data for yield prediction, as well as future research directions regarding geo-spatial issues in big data agriculture analytics with IoT and AI. The President of the University of Tsukuba, Professor Kyosuke Nagata, greeted the audience and clearly stated the necessity of research to develop weather adaptive varieties in agriculture in order to combat challenges associated with water consumption and climate change. In this session, the students from the University of Tsukuba also had a chance to present some of their current research projects to the distinguished lecturers from partner universities. Also discussed in the session with the CEO from i-Focus and Clever Agri (Japan) was the question of how to bring cost-effective AI and IoT–based technologies to users. Closing remarks and a summary of the day's presentations were delivered by Dr. Ryozo Noghuci, Associate Professor from the Faculty of Life and Environmental Sciences and co-organizer of this important session. The guest speakers engaged in a productive discussion with graduate students and young PhD fellows at the University of Tsukuba. At the University of Tsukuba, the team members visited the T-PIRC research center and discussed opportunities for joint research ventures. Additionally, proposals for SDG-related projects such as SATREPS and the e-Asia application for JST funding were also discussed with members from partner universities, where further planning and collaboration with JICA was the focus.

Photo session of the guest speakers and organizing participants

Welcome speech by the President of the University of Tsukuba, Kyosuke Nagata

Presentation by one of the guest speakers, Toshio Koike, Director of ICHARM (Japan)

Presentation by one of the guest speakers, Wanrat Abdullakasim from Kasetsart University (Thailand)

Q&A session

Participants from different countries

Reporter: Tofael Ahamed

Special Session

ID: N11S Date of Report: October 31, 2019

4th International Symposium on Nature-Culture Linkages in Heritage Conservation in Asia and the Pacific: Mixed Cultural and Natural Heritage	
Session Organizer	Masahito Yoshida Chair/Professor, World Heritage Study, University of Tsukuba UNESCO Chairholder on Nature-Culture Linkages in Heritage Conservation
Date & Time	October 4 10:00 AM – 4:00 PM
Place	Convention Hall 300
Number of the Participants	Total: 82 (Speakers: 12, Audience: 60)

Summary of the Session

The UNESCO Chair on Nature-Culture Linkages at the University of Tsukuba is continuously working toward sustainable development goal 11, Target 4 by “strengthening efforts to protect and safeguard the world’s cultural and natural heritage” through innovative capacity-building in Asia and the Pacific. In this fourth international symposium organized by the UNESCO Chair, we explored with international guest speakers and participants of the Capacity Building Workshops on Nature-Culture Linkages in Asia and the Pacific (CBWNCL) 2019 the theme, *mixed cultural and natural heritage*.

To discuss this important theme, representatives from the UNESCO World Heritage Centre, ICCROM, IUCN’s Nature-Culture Initiative Program, as well as experts, promoters and key collaborators from the Nature-Culture approach in World Heritage, ICOMOS, Deakin University in Australia and Pimachiowin Aki Corporation in Canada joined as our partners. To enrich our discussion, experts from the Ministry of the Environment and Agency for Cultural Affairs (Japan) presented Japan’s situation regarding its nature and culture sectors. The 13 participants from the CBWNCL (2019) who attended the meeting and took part in the discussion were heritage practitioners from the nature and culture sectors, and come from Albania, Australia, China, India, Indonesia, Nepal, the Philippines, Tanzania, Thailand and Vietnam. Finally, 8 students from the University of Tsukuba (i.e., from the four countries, Brazil, China, Ghana, Japan and Thailand) participated in the process as observers.

Challenges in nominating Mixed Cultural and Natural Heritage sites for the World Heritage List
(by Dr. Mechtild Rössler)

Nature-Culture linkages in World Mixed Cultural and Natural Heritage in Africa
(by Dr. Webber Ndoro)

Toward the integrated management of nature and culture in Natural World Heritage sites
(by Mr. Takahiro Okano)

Cultural landscapes as an approach to local development
(by Dr. Kumiko Shimotsuma)

Key issues on Nature-Culture Linkages in heritage conservation: Progress and challenges
(by Dr. Gamini Wijesuriya, Ms. Kristal Buckley and Mr. Tim Badman)

Group photo

Reporter: Maiko Suda, Mariko Ikeda and Masahito Yoshida

ID: N12S Date of Report: October 23, 2019

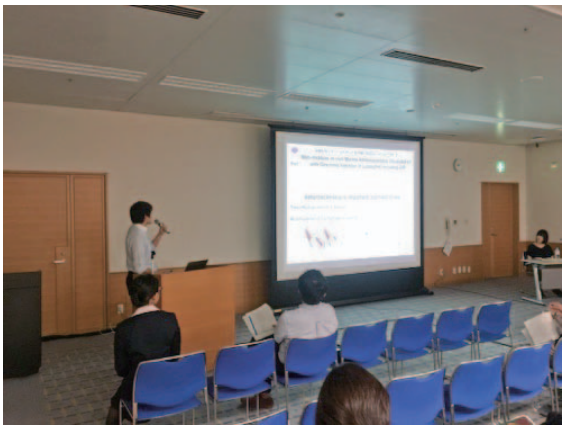
Student Presentation (Oral or Poster presentation, Medical Science & Life Science)	
Session Organizer	Eiji Warabi, Masatoshi Miyakoshi, Tadachika Koganezawa, Manabu Kusakabe, Tomoaki Mizuno, Jun Kunimatsu
Date & Time	October 4 9:00 AM – 4:00 PM
Location	Conference Room 405 & 406
Number of the Participants	Total: 151 (Speakers: 81, Audience: 70)

Summary of the Session

The aim of this session was to facilitate an open discussion and interaction among young researchers/students, and it was co-organized by the Faculty of Medicine (i.e., the doctoral program in biomedical and clinical sciences, the PhD program in human biology, the master's and doctoral programs in Kansei, and the behavioral and brain sciences). Organization of the session was also assisted by the master's program in medical sciences, doctoral and master's programs in nursing science, doctoral program in human care science, doctoral and master's programs in biological sciences, doctoral program in life sciences and bioengineering. In total, 78 graduate students from the University of Tsukuba (i.e., students from the abovementioned co-sponsored and cooperating organizations), the University of Bordeaux, and the University of Sao Paulo and National Taiwan University studying in the field of medicine and life science each performed a two-minute oral presentation and poster presentation. At the poster presentation venues, active discussions among young researchers were seen. The presentations were reviewed by several faculty members, and 12 presenters were awarded as outstanding poster award winners.

The following are the names of the award winners:
Megumi Ishida (University of Tsukuba, Satoru Takahashi laboratory), Jiwoo Kim (University of Tsukuba, Tomoki Chiba laboratory), Sakura Eri Maezono (University of Tsukuba, Yu Hayashi laboratory), Hayate Suzuki (University of Tsukuba, Fumihiro Sugiyama laboratory), Kosuke Takeuchi (University of Tsukuba, Osamu Ohneda laboratory), Chia-Jung Tsai (University of Tsukuba, Yu Hayashi laboratory), Naoto Muromachi (University of Tsukuba, Akiyoshi Fukamizu laboratory), Yukiko Namekawa (University of Tsukuba, Masashi Yanagisawa laboratory), Yukino Ogura (University of Tsukuba, Norihiko Obayashi laboratory), Ammar Hasan Shaker (University of Tsukuba, Fumihiro Sugiyama laboratory), Mengxi Yun (University of Tsukuba, Masayuki Matsumoto laboratory), and Chun-Hao Chien (National Taiwan University, Shin-Kuo Chen laboratory).

Opening remarks (Professor N. Tsuchiya)



Two-minute presentation

Poster presentation

Poster presentation

Closing remarks (Professor K. Irie)

Award winners

Reporter: Eiji Warabi

ID: N13S Date of Report: November 26, 2019

Practice and Research for Social-Neuro Diversity Science	
Session Organizer	Ginga SASAKI
Date & Time	October 4 1:30 PM – 4:00 PM
Location	Conference Room 102
Number of the Participants	Total: 89 (Speakers: 6, Audience: 83)

Summary of the Session

This was a public session entitled “practice and research of social neurodiversity science” and was held by the Center for Diversity, Accessibility and Career Development, as well as Pre-Strategic Initiatives (Research Based-Building). A total of 83 people, including those from overseas, participated in this session.

The following question was posed: What is social-neuro diversity science?

This is a new (fusion) academic area explored by the Faculty of Human Sciences (University of Tsukuba). Research in this area is aimed at the realization of a society where diversity can be utilized through respect of diversity among people and by bridging basic research and social implementation activities through research on neural infrastructure, both of which create, for example, greater diversity, evaluation of cognitive and/or behavioral characteristics and political and/or educational system design.

The following topics were approached in the session’s panel discussion:

In the panel discussion, under the theme *developmental disabilities* sic up-and-coming young researchers and practitioners spoke about their work and future directions in the field. The following are titles of individuals’ works:

1) Soichiro Matsuda (University of Tsukuba): “Analysis of Human-Human Interaction of Children with Autism Spectrum Disorder.”
2) Ana Kanaoka (LITALICO Inc.): “What is the Ideal Way of Support for Foreign Children with Disability?”
3) Yuka Ishizuka (University of Tsukuba): “The Ideal Way of Research and Practice for a Smooth Transition from Preschool to School-age Periods.”
4) Ginga Sasaki (University of Tsukuba): “Research and Practice Regarding Support for College Students in the “Gray Zone” with Developmental Disabilities.”
5) Daiki Enomoto (LITALICO Inc.): “Way of Research and Implementation in the View Point of Cooperate Research Institute.”
6) Mutsuhisa Ban (University of Tokyo): “Neurodiversity and Epistemic Justice”

The following is a description of the roundtable/demonstration discussion conducted in the session. Following the panel discussion, we introduced the research work and practice of the six speakers in a poster presentation format. For the material that could not be communicated with the discussion, we spoke with participants on their latest research, behind-the-scenes research and practice, and their

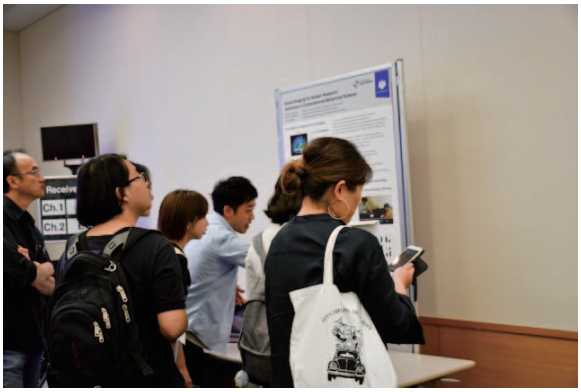
future research directions.

Additionally, a booth for assistive technology useful for people with developmental disabilities will be set up to make use of various characteristics such as the smart pen, noise cancellation, the loss prevention tag, and the support information distribution service. Through such innovations, we have the opportunity to see, touch and experience technology directly.

The following provides a summary of the significance of this session.In this session, we aimed to go beyond the barriers of the venue, using a remote video communication system so that people from all over the world could participate in this session (30 people participated via the remote system). We also used a web service for questions and answers, where accepted questions and comments from participants could be conducted in real time and discussions incorporating the opinions of participants during the panel discussions could be heard. Additionally, manga created by persons with developmental disabilities were distributed among visitors to the venue to promote a broader understanding of the topic area. Above all, the attraction of this session was the activities of the young and up-and-coming researchers and practitioners. In the panel discussion, following an introduction to the activities by the six speakers, we discussed the topic *society where diversity can be utilized* while integrating each of the specialty areas, engineering, psychology, pedagogy, and sociology. The term “diversity” often refers to only the achievement of women, for example, but this event promoted discussions based on the theme *diversity of the brain (neurodiversity)*.

In conclusion, to utilize the rich diversity that exists among people, it is important not only to understand that people are diverse, but also how to form interactions (society) between various people.

Panel discussion



Roundtable (Poster session)

Demonstrating session for assistive technology

Reporter: Ginga SASAKI

ID: N14S Date of Report: November 1, 2019

Open lecture: Role of particle beam therapy in cancer treatment	
Session Organizer	Takeji Sakae
Date & Time	October 4 9:00 AM – 11:30 AM
Location	Conference Room 202A
Session ID	N14S
Number of the Participants	Total: 38 (Speakers: 3, Audience: 35)

Summary of the Session

Particle therapy continues to receive worldwide attention, and many projects have launched in Asia. The University of Tsukuba has 35 years' experience in proton beam therapy, has been investigating advanced treatment techniques and has performed education of specialists in this field. The session included lectures on the current state of particle beam therapy and future prospects in the area. Three lectures included the following topics: "present state of particle beam therapy in Japan", "particle beam therapy in Taiwan" and the "future of particle beam therapy in Australia". The lecturers presenting these topics were Hideyuki Sakurai (University of Tsukuba, Japan), Hsiang-Kuang Tony Liang (National Taiwan University, Taiwan) and Hien Le (Royal Adelaide Hospital, Australia). Accordingly, the issues associated with particle beam therapy in Asia and Oceania were discussed. In the future, the importance of each country's cooperation and human-resource education was emphasized. The audience in attendance at the session posed insightful questions, upon which the perspectives of the respective researchers from the different fields were presented and a meaningful discussion ensued.

Lecturers

Opening remarks

Opening remarks

Discussion

Dr. Tony Liang

Dr. Hien Le

Reporter: Takeji Sakae

Special Session

ID: N15S Date of Report: October 16, 2019

What is the next step? How do we realize the future, which ensured diversity and gender equality for creating innovation by young generation?	
Session Organizer	Yoshiyuki Kawano
Date & Time	October 4 10:00 AM – 12:30 PM
Location	Conference Room 102
Number of the Participants	Total: 85 (Speakers: 2, Audience: 83)

Summary of the Session

In this session, two researchers, Assistant Professor Dr. Ai Hori (Faculty of Medicine, University of Tsukuba) and Advisory Software Developer Ms. Yuka Nomura (IBM Japan) were celebrated as recipients of the TIDE Women's Award based on their distinguished research achievements and social activities. Following the ceremony, keynote speaker Ms. Inga M.W. Nyhamar, Norway's ambassador to Japan, shared information regarding Norway's gender equality and diversity promotion. In the final part of the session, Co-founder of Think Tank SophiaBank Ms. Kumi Fujisawa and Ms. Inga M.W. Nyhamar discussed with the audience the next steps in solving gender inequality issues in Japanese universities, research institutes and companies. Participants shared their experiences of challenges such as cultural biases in Japan and barriers between generations regarding gender norms and roles and took lessons learned from Norwegian efforts to overcome such challenges.

*TIDE: University of Tsukuba, National Institute of Advanced Industrial Science and Technology (AIST) and IBM Japan collaborate to promote diversity and inclusion (and supported by Ministry of Education, Culture, Sports, Science and Technology), particularly in terms of gender equality. Tsukuba advancing initiatives for diversity and environment (TIDE) is our project name.

*TIDE Women's Award: TIDE Women's Award is an award for distinguished female researchers and engineers in these institutions.

Dr. Ai Hori

Ms. Yuka Nomura

TIDE Women's Award winners

Ms. Inga M.W. Nyhamar
(Norway's ambassador to Japan)

Ms. Inga M.W. Nyhamar and Ms. Kumi Fujisawa

Ms. Inga M.W. Nyhamar, Ms. Kumi Fujisawa and TIDE Women's Award winners

Reporter: Yoshiyuki Kawano

Special Session

ID:N20C Date of Report: November 7, 2019

Human-Agent Interaction and Imagination for Future Society	
Session Organizer	OSAWA Hirotaka
Date & Time	October 4 1:30 PM – 5:00 PM
Location	Conference Room 202A
Number of the Participants	Total: 34 (Speakers: 4, Audience: 30)

Summary of the Session

Human-agent interaction (HAI) is a new research area that comprehensively models interactions between humans and social robots (or virtual agents). An agent is an artifact or technology that interacts with a user as if it could act with its own purpose, motivation, or intent. People attribute agency to many things and technologies in everyday life, such as robots, virtual characters and video games, virtual reality, and smart cars. In this session, we discussed how HAI research could extend our future. Omar Mubin and Mohammad Obaid, program chairs of the HAI International Conference, presented at the session. To begin, organizer Osawa explained the recent trends in HAI research. Mohammad Obaid then presented a study on a new aspect of agents in HAI research, specifically proposing new interactions using drones. Omar Mubin then shared with us the results of a survey of users' ethical reactions to cheating agents. Following this, a panel discussion on future HAI was held with four people including science fiction critic and writer Dohjin Miyamoto. During the Q&A session, participants and others discussed cultural differences in agent design between Japan and other countries.

Presentation by Dr. Mohammad Obaid

Presentation by Dr. Omar Mubin

Panel discussion

Reporter: OSAWA Hirotaka

Special Session

ID: N25S Date of Report: October 21, 2019

Study Anywhere	
Session Organizer	Sato SANAI
Date & Time	October 4 9:00 AM – 4:00 PM
Location	Open space in the venue
Number of the Participants	Total: Unspecified (Speakers: 5 , Audience: many and unspecified (open to the public))

Summary of the Session

Tsukuba Science City is where Japan's state-of-the-art science and technology gather. When you walk in Tsukuba, you see the research results of over 160 research institutions and more than 20,000 researchers. The University of Tsukuba, located in the heart of the city, offers a wide range of academic disciplines including physical education and art. Students at the university have access to a broad range of academic opportunities to choose from. There are many student-led seminars, where students can discuss ideas and learn in collaboration. This time we planned to explore the research being conducted by students. We looked at student presentations on research and academic disciplines of interest. Like the "Tsukuba" city where there are new things to discover by walking around the city, this is a project where visitors of the Tsukuba Society can discover new things *anywhere*.

Specifically, we participated in two activities:

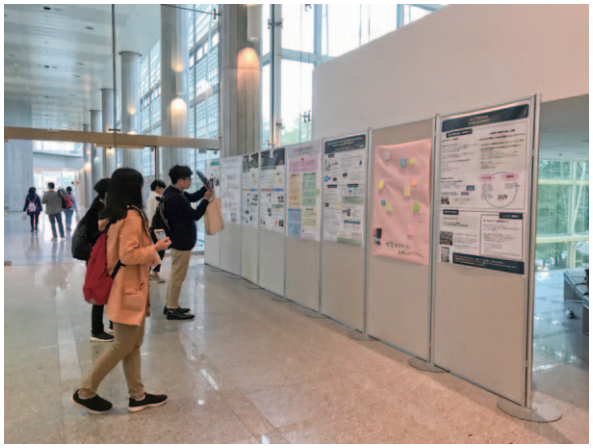
- Planning and management of presentations regarding research and academic activities by students (poster format).
- Promotion of exchange of opinions between presenters and visitors.

On the day of the event, as soon as the doors opened, many people came to view the posters. One of the unique points of this poster session was a free exchange of ideas which is not bound by time or space. The presenter wrote notes in advance regarding the following points on the poster using "post-it":

① "Promotional points" such as originality of research and personal skills.

② "Recruitment items" such as seeking ideas, knowledge, and resources (economic and instrumental).

The visitors then wrote back on the poster with their comments, suggestions and offers. This encouraged interactive communication.



Reporter:　Sato SANAI

ID: W02S Date of Report: November 5, 2019

Special Lectures by the 2019 Winners of the World Cultural Council Awards	
Session Organizer	World Cultural Council (WCC); University of Tsukuba
Date & Time	October 4 10:00 AM – 12:00 PM
Location	Convention Hall 200
Number of the Participants	Total: 102 (Speakers: 2, Audience: 100)

Summary of the Session

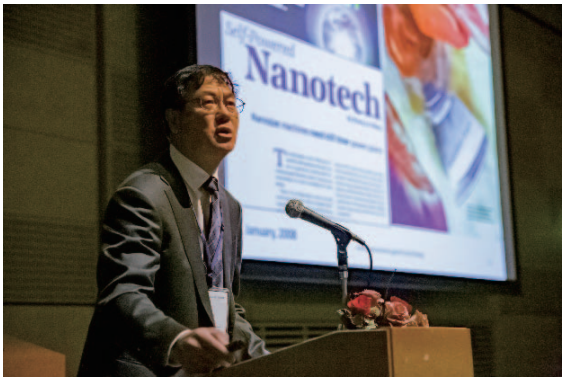
Dr. Zhong Lin Wang, Winner of the 2019 “Albert Einstein” World Award of Science, gave a lecture on the topic “Nanogenerators for self-powered systems, Internet of things and large-scale blue energy”. A summary of this presentation is given below:

Energy is the bedrock of modern society, but current power plants are largely unsustainable and environmentally damaging. Although energy is widely available in our environment, converting it into electric power remains a challenge. Wang’s invention of the triboelectric nanogenerator (TENG) solves this problem. TENGs can convert low-frequency mechanical energy into electricity for sustainably powering sensor networks and the Internet of things. It is considered the most important discovery for harvesting mechanical energy since the invention of the electromagnetic generator by Faraday in 1831. It also paves the way for the sustainable harvest of vast wave energy from oceans.

Mr. Paulo Branco, Winner of the 2019 “Leonardo da Vinci” World Award of Arts, gave a lecture on the topic“How producing films can be a creative process?” A summary of this presentation is given below:

Being a producer is to make the dreams of others come true. It is rather fascinating to be able to share the creative process of the authors we admire—their phantoms and their dreams. A producer all the time must be a kind of chameleon so that he/she can respond to the inner worlds of creators different from one to another, and sometimes even opposite. We have to question everything at every moment (and often contradict ourselves), being multiple at the service of the creative worlds we would otherwise hardly reach. And, in the end, we are required to make a work of the art being born, as Leonardo da Vinci pointed out: “obstacles cannot crush me; every obstacle yields to stern resolve.”

Dr. Wang's lecture – Photo I



Dr. Wang's lecture - Photo II

A question for Dr. Wang

Mr. Branco's lecture – Photo I

Mr. Branco's lecture – Photo II

A question for Mr. Branco

Reporter: Mahdi Katsumata Shah

Special Session

ID: W03S Date of Report: November 5, 2019

The World Cultural Council 36th Award Ceremony	
Session Organizer	World Cultural Council (WCC); University of Tsukuba
Date & Time	October 4 4:30 PM – 6:00 PM
Location	Main Convention Hall
Number of the Participants	Total: 110 (Speakers: 10, Audience: 100)

Summary of the Session

The ceremony began with a welcome address by Dr. NAGATA Kyosuke, President of the University of Tsukuba; a salutatory address by Professor Sir Colin Blakemore, President of WCC; a congratulatory speech by Mr. Nakaoka, Deputy Commissioner for Cultural Affairs (Agency for Cultural Affairs Government of Japan); and Dr. René Asomoza Palacio's message on behalf of Maestro Rafael Estrada, the founder and President Emeritus of the WCC.

Professor Zhong Lin Wang, Chair and Regents Professor, School of Materials Science & Engineering at Georgia Institute of Technology, received the "Albert Einstein" World Award of Science, 2019. Mr. Paulo Branco, Portuguese Independent Film Producer, received the "Leonardo Da Vinci" World Award of Arts, 2019. Both dignitaries gave acceptance speeches.

Special Recognition diplomas were awarded to the following ten young researchers: ENAMI Shinichi, Senior Researcher, National Institute for Environmental Studies; ICHIHASHI Yasunori, Team Leader, BioResource Research Center, RIKEN (Institute of Physical and Chemical Research); IKEDA Kazuhiro, Research Group Leader, Photonics System Group, National Institute of Advanced Industrial Science and Technology; KIKUCHI Yasunori, Associate Professor, Institute for Future Initiatives, University of Tokyo; MATSUMOTO Masayuki, Professor, Faculty of Medicine, University of Tsukuba; MIYAUCHI Hiroyuki, Senior Research Engineer, Building Research Institute; SHIMADA Yuko, Assistant Professor, Life Science Center for Survival Dynamics, Tsukuba Advanced Research Alliance, University of Tsukuba; UCHIDA Ken-ichi, Group Leader, Spin Caloritronics Group, National Institute for Materials Science; USHIRODA Yutaka, Professor, High Energy Accelerator Research Organization; YOSHIOKA Taiyo, Researcher, National Agriculture and Food Research Organization.

In addition, José Vasconcelos Special Recognition of Education was bestowed to President Nagata.

Whole stage

Professor Blakemore's speech

Dr. Wang's acceptance speech

Mr. Branco's acceptance speech

Group photo

Traditional Japanese music

Reporter: Mahdi Katsumata Shah

Interactive Poster Session & Exhibition Booths

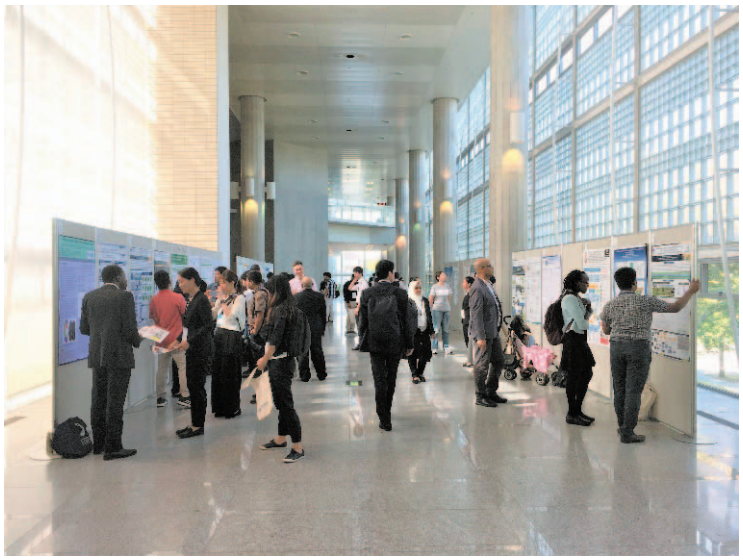
Interactive Poster Session

Poster presentations by participants were carried out as follows. Posters were exhibited across a 3-day period.

Date & Time:
[Day 1] October 2 (Wed.) 12:50 PM - 1:20 PM
[Day 2] October 3 (Thu.) 12:50 PM - 1:20 PM

Poster No.	Presenter	Poster Title
1	Aduayom-Ahego Akouetevi	Biomechanical analysis of safety shoes in an industrial environment
2	Yuki Hiruta	The sensitivity of hourly electricity demand to climate condition in Japan.
3	Md. Monirul Islam	Remote Sensing based technology for crop damage assessment and insurance for crops in emerging economies: A Geo-econometric Approach
4	Sara Tokhi Arab	Yield Estimation of Grapes form Vegetation Phenological Indices Using ANN
5	Kazuki Nanko	Interactions among forest canopy, raindrop, wind, and soil
6	Andrei Novitskii	Thermoelectric materials for energy harvesting power generation
7	Papa Saliou SARR	The improvement of nutrient status in phosphate rock-enriched composts is tightly linked to increases in abundance and activity of total and beneficial microbes
8	Cletos MAPIYE	Seeking a confluence between evidence-based research and policy on Food Security: Young Scientistsâ€™ workshop outcomes
9	Minami Tsuyoshi	MINAMI LAB. [Applied Supramolecular Chemistry]
10	Kenjiro YAMAMOTO	COAT THE WALL. PROTECT THE LIVES OF MASONRY RESIDENTS.
11	Akihiro Nakamura	Fragment-based discovery of inhibitory compounds of bacterial proteases for the development of the novel antibiotics.
12	Masaki Endo	Genome editing in plants: progress and challenges
13	Xin Yao	Promoting Joint International Research in Non-English Speaking Countries â€“ An Example from Osaka University
14	Muhammad Iqbal Habibie	Land Suitability Analysis for Maize Production in Indonesia Using Satellite Remote Sensing and GIS-based Multicriteria Decision Support System

Poster No.	Presenter	Poster Title
15	Zhipin Ai	A global simulation of the second-generation bioenergy crop yield with a global hydrological model H08: enhancement and validation
16	Nety Nurda	Carbon Level Assessment to Establish Forests Resilience in Indonesia Using Satellite Remote Sensing
17	Md Shamsuzzoha	Emergency Response System for Reducing Damages from Cyclone Risks in Agricultural Crops and Introducing Geo-spatial Insurances in the Coastal Areas of Bangladesh
18	Barbara Kabai Burmen	Issues to consider when implementing standardized Tuberculosis Contact investigation in a setting with routine contact invitation: an experience from a high-TB burden area
19	Raymond.V.Rivera Virtudazo	Philippine Thermal Energy Materials Research Program (ThEM)
20	Deniz Vurmaz	AI driven point-of-care tools for rapid diagnostics of trauma
21	Fatima El Guezar	Wind Energy Assessment in Morocco
22	Addie Ira Borja Parico	An Aerial Weed Detection System for Green Onion Crops Using the You-Only-Look-Once (YOLO) Deep Learning Algorithm
23	XIE YUNYAN	Deep learning and Multiple Sensors Data Acquisition System for Real-Time Decision Analysis in Agriculture Using Unmanned Aerial Vehicle
24	Hirofumi Shintaku	On-chip electrophoretic cytometry for integrative single-cell analyses
25	Kei Hayashi	Preparation, thermoelectric properties, and local structure of B doped Mg2Si single crystal
26	Seioh EZAKI	Analysis of gait change by robot suit HAL in myelopathy patients in acute or chronic phase after surgery
27	Hiroto Takeuchi	The effect of combined cognitive and neurofeedback training for attention and working memory.
28	Rubaiya Binte Mostafiz	Land Use and Inventory Planning for Diversified Crops Using GIS and Satellite Remote Sensing



Exhibition Booths

Booths and posters were displayed by sponsors, member institutions and other related organizations to introduce their projects to the participants in attendance.

DAY 1 - 3 (October 2 – 4)

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DAY 3 (October 4)

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Poster Exhibition

DAY 1 - 3 (October 2 – 4)

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ESAKI Leo, President of the Science and Technology Promotion Foundation of Ibaraki

OMI Koji, Founder & Chairman of Science and Technology in Society Forum (STS forum)

Observers

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IIDA Yuji, Director-General, Industrial Science and Technology Policy and Environment Bureau, Ministry of Economy, Trade and Industry

MATSUO Hiroki, Director General for Science, Technology and Innovation, Cabinet Office

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TOGAWA Naomasa, Assistant Vice-Minister for Engineering Affairs, Minister's Secretariat, Ministry of Land, Infrastructure, Transport and Tourism

*: Chair of the Tsukuba Conference Organizing Council
As of July 9, 2019, listed in alphabetical order (of last name)

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