

The Hitachi Global Foundation Science and Technology Seminars

"Exploring the Mysteries of Sleep: From Basic Research to Sleep Wellness"

The 19th Hitachi Global Foundation Science and Technology Seminar on November 12 (Sunday)

The world-renowned authority on sleep-science research Dr. Masashi Yanagisawa (Director and Professor, International Institute for Integrative Sleep Medicine (WPI-IIS), University of Tsukuba) delivered an easy-to-understand lecture on what sleep is all about, ranging from basic research on the nature of sleepiness to ultimate sleep methods based on the latest studies.

Dr. Yanagisawa discovered the previously unknown neurotransmitter orexin, unlocking the mystery of narcolepsy, a disorder that disrupts our sleep-wake processes. He is also the recipient of numerous prestigious awards, including the Medal with Purple Ribbon in Japan and the Breakthrough Prize, for his outstanding research outcomes.

The hybrid seminar, held in-person at the Kudan-Kaikan Terrace (Chiyoda-ku, Tokyo) and online with Zoom Webinars, attracted more than 500 attendees.



Venue (Kudan-Kaikan Terrace)

Dr. Yanagisawa

Why Do Animals Sleep?

From the origins of sleep and the nature of sleepiness to the ultimate sleep methods

The Japanese are said to sleep less than other people around the world. Many people have concerns and questions about sleep, with more than 150 questions sent in ahead of the seminar. The question-and-answer session that followed the lecture featured a lively discussion with the attendees.

The pre-seminar questions ranged from basic queries such as the reason living creatures sleep to more specific questions about changes in sleep quality with aging, children's sleep, short sleepers, the mechanisms of early birds and night owls, and ways to get a sound sleep. Dr. Yanagisawa answered these questions in detail by presenting evidence during the lecture.

The questionnaire conducted after the seminar brought forth a variety of comments, such as "I learned many new things and was happy to acquire evidence-based knowledge" and "The lecture made me realize once again the importance of sleep."

News Letter

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The Hitachi Global Foundation publishes news letters featuring its many activities. We offer various types of news about our Foundation, ranging from activity reports on symposiums, seminars, awards ceremonies, and other events to our latest topics. Please take a look to find out more.

Realization of an Inclusive Society

Launch of "Global Society Review"

The Hitachi Global Foundation has launched a new electronic journal, "Global Society Review," (to be published twice a year in June and December) as a project contributing to realize an inclusive society.

The journal will serve as a platform for experts in academic fields related to inclusion to organically interact and share their expertise with one another, thereby contributing to new ideas and perspectives. The Foundation will also utilize its know-how in conducting awareness-raising activities, including symposiums on building a society that recognizes diverse viewpoints and values, to introduce different experiences and activities to the general public in an effort to promote the understanding and creation of an inclusive society in Japan.*

The commemorative first issue titled "What is the Creation of an Inclusive Society?" features a roundtable discussion and special reports to discuss the current challenges, views of experts, and others.

*A society where people of different nationalities and ethnicities coexist as members of the community while recognizing each other's cultural differences to build equal relationships

Source: The Ministry of Internal Affairs and Communications, Research Report on the Promotion of Multicultural Coexistence: Toward the Promotion of Multicultural Coexistence at Regional Levels (March 2006)



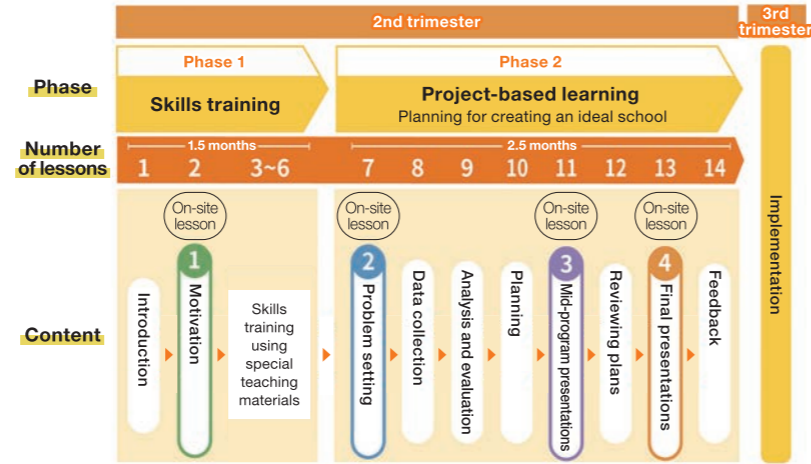
Human Development

Hitachi Future Innovator Program FY2023 On-site Lessons

The Hitachi Global Foundation has developed the project-based learning Hitachi Future Innovator Program for fifth graders to foster the abilities to find and solve problems required of future human resources in science and technology. The Foundation has collaborated with Hitachi Group companies since 2016 to offer on-site lessons at schools.

The FY2023 program was carried out at Sasame Elementary School in Toda City (completed in October) and four other schools in Bungotakada City in Oita Prefecture, Akita City in Akita Prefecture, Tamamura Town in Gunma Prefecture, and Hitachi City in Ibaraki Prefecture.

*Please refer to the previous News Letter for a report on Sasame Elementary School in Toda City.



Promotion of Academic Research, Science and Technology

The Hitachi Global Foundation Asia Innovation Award FY2023 Award Recipients

The Hitachi Global Foundation Asia Innovation Award was launched in FY2020 to promote innovations in science and technology that contribute to solving social issues and realizing a sustainable society in the ASEAN region. This award recognizes individuals and groups who have notably served the public interest through their outstanding research and development projects that envision an ideal society and incorporate plans to implement innovative science and technology with the aim of contributing to the United Nations Sustainable Development Goals (SDGs). Applicants for the FY2023 award were invited from 27 universities and research institutes in six ASEAN countries (Indonesia, Cambodia, Laos, Myanmar, the Philippines, and Vietnam) to present their research and development achievements aimed at the targets outlined in SDG 1 "No Poverty" and SDG 7 "Affordable and Clean Energy."

Goal 1 "No Poverty"
Targets 1.1 Eradicate extreme poverty, 1.2 Reduce at least by half the proportion of all people in poverty, 1.3 Achieve substantial coverage of the poor and the vulnerable, 1.4 Ensure to have equal rights to economic resources, as well as access to basic services, ownership and control over property, and financial services, 1.5 Build the resilience of the poor and those in vulnerable situations, 1.b Create sound policy frameworks to support accelerated investment in poverty eradication actions.

Goal 7 "Affordable and Clean Energy"
Targets 7.1 Ensure universal access to energy services, 7.2 Increase substantially the share of renewable energy, 7.3 Double the global rate of improvement in energy efficiency, 7.a Facilitate access to clean energy research and technology and promote investment, 7.b Expand infrastructure and upgrade technology in developing countries.

Fifteen recipients were selected after thoroughly reviewing the applications accepted through recommendations from eligible universities and research institutes. The awardees and their research outlines were announced on the Hitachi Global Foundation website at the end of January 2024.

Best Innovation Award 3 million yen

Optimizing the Performance of Lithium-Ion Battery Materials for Electric Vehicle to Support Net Zero Emission 7.2 7.3 7.a

Country Indonesia Institution University of Indonesia Name Dr. Anne Zulfia Syahrial

Dr. Anne Zulfia Syahrial has conducted research on the optimization of electrode materials for lithium-ion batteries to develop a large-scale power source with high energy density and excellent cycle capabilities. She utilized Indonesian minerals and activated carbons from waste coconut shells to produce three lithium-ion battery prototypes intended for practical use, and received a patent for her invention.

<p>Outstanding Innovation Award 1 million yen</p> <p>Energy Management Solutions for Renewable Energy Technologies</p> <p>Country Philippines Institution Ateneo de Manila University Name Dr. Erees Queen Barrido Macabebe</p> <p>Dr. Erees Queen Barrido Macabebe has developed energy monitoring systems used for various applications, including solar power generation, smart homes, and microgrid systems.</p>	<p>Outstanding Innovation Award 1 million yen</p> <p>Utilizing Eco-Friendly Biomass Briquettes (EFBB) by Transforming Waste into Practical Alternative Solid Fuel</p> <p>Country Cambodia Institution Institute of Technology of Cambodia/ Research Innovation Centre Name Dr. Kinnaeth Vongchanh</p> <p>Dr. Kinnaeth Vongchanh has worked out a mixing ratio of organic wastes, including wastepaper, sawdust, and waste oil, to produce eco-friendly biomass briquettes (EFBB) that match or exceed the energy performance of firewood, and is currently promoting EFBB for wider use.</p>	<p>Outstanding Innovation Award 1 million yen</p> <p>Utilization of Advanced No-Cook Technology in Ethanol Production</p> <p>Country Vietnam Institution Hanoi University of Science and Technology Name Dr. Son Ky Chu</p> <p>Dr. Son Ky Chu has used advanced non-cook technology in the ethanol production process to reduce steam use by 35%, water use by 8%, CO2 emissions by 30%, and production costs by 7.7%, compared with the current technology.</p>	<p>Outstanding Innovation Award 1 million yen</p> <p>ITS Djamoë: Translating Indigenous Knowledge for Advancing Humanity</p> <p>Country Indonesia Institution Sepuluh Nopember Institute of Technology Name Dr. Sri Fatmawati</p> <p>Dr. Sri Fatmawati has developed and commercialized the herbal medicine Menitemu from the university brand ITS Djamoë by scientifically analyzing the traditional Indonesian medicine djamoë (made from roots, leaves, and other plant parts).</p>	<p>Outstanding Innovation Award 1 million yen</p> <p>Developing Sustainable Disease Control Strategies for Sesame Production against Pigeon Pea Cyst Nematode</p> <p>Country Myanmar Institution Yezin Agricultural University Name Dr. Yu Yu Min</p> <p>Dr. Yu Yu Min has devised measures to reduce the density of soil nematodes by cultivating marigolds and other plants as green manure after the sesame harvest season, with the aim of helping small sesame farmers secure a stable income.</p>
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Encouragement Award 500,000 yen

<p>Lighting Technology for a Sustainable Future</p> <p>Country Vietnam Institution Ton Duc Thanh University Name Dr. Anh Doan Quoc Nguyen</p>	<p>Development of Livestock and Environmentally Friendly Sustainable Alternative Disinfectant (SDA)</p> <p>Country Indonesia Institution University of Sumatera Utara Name Dr. Nurzainah Ginting</p>
<p>Open-Source Hydro Technology A Small-Scale Hydro Technology in the Philippines Free for All</p> <p>Country Philippines Institution De La Salle University Name Mr. Isidro Antonio III Valdivia Marfori</p>	<p>Greenes: Power Electronics - The Key Technology for Solar Photovoltaic (PV) Systems</p> <p>Country Vietnam Institution Hanoi University of Science and Technology Name Dr. Phuog Hoang Vu</p>
<p>ElectriPHI Project: Electrification Planning in Small Off-grid Islands in the Philippines</p> <p>Country Philippines Institution University of the Philippines Diliman Name Dr. Joey Duran Ocon</p>	<p>INOSEC19: A Covid-19 Screening Tool to Detect Patients with Virus (Positive) or Healthy (Negative) through the Smell of Axillary (armpit) Sweat</p> <p>Country Indonesia Institution Sepuluh Nopember Institute of Technology Name Dr. Riyanarto Sarno</p>
<p>Development of an Efficient Combustion for Burning Low-Grade Fuel Derived from Gasification Process</p> <p>Country Laos Institution National University of Laos Name Dr. Lemthong Chanphavong</p>	<p>Development of Innovative Microgrids and Smart Grids in Cambodia: Tools, Case Studies, and Testbed Platform</p> <p>Country Cambodia Institution Institute of Technology of Cambodia Name Dr. Vannak Vai</p>
<p>Greenes: Greening the Future by Energy Harvesting Solutions from Ambient Sources</p> <p>Country Vietnam Institution Hanoi University of Science and Technology Name Dr. Minh Thuy Le</p>	

<p>Keiyou Elementary School in Bungotakada City, Oita Prefecture</p>	<p>Izumi Elementary School in Akita City, Akita Prefecture</p>
<p>Oomika Elementary School in Hitachi City, Ibaraki Prefecture</p>	<p>Chuo Elementary School in Tamamura Town, Gunma Prefecture</p>