#### THE SCIENCE AND TECHNOLOGY FOUNDATION OF JAPAN

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# **JAPAN PRIZE**

# Two US Scientists Awarded 2009 Japan Prize

Their Majesties the Emperor and Empress Attended the Presentation Ceremony



The 2009 Japan Prize Presentation Ceremony was held in the National Theatre of Japan in Tokyo on Thursday, April 23, to honor those who have significantly contributed to the progress of world science and technology and who have dedicated themselves to promoting peace and prosperity for mankind.

This year, 163 candidates were nominated in the field of "transformation towards a sustainable society in harmony with nature" and 308 candidates were nominated for "technological integration of medical science and engineering." From the total 471 nominees, the 2009 Japan Prizes went to two American scientists.

Dr. Dennis L. Meadows won the prize for his contribution towards a sustainable world as based upon a celebrated 1972 report titled "The Limits to Growth." Dr. David E. Kuhl won the prize for his contribution to tomographic imaging in nuclear medicine.

## OUTLINE

The Japan Prize is awarded to world-class scientists and researchers who were credited with original and outstanding achievements and contributed to the advancement of science and technology, thereby furthering the cause of peace and the prosperity of mankind. No distinction is made as to nationality, occupation, race, or gender. Only living persons may be named. Fields of study for the prize encompass all categories of science and technology, with two fields designated for the prize each year in consideration of developments in science and technology. Each Japan Prize Laureate receives a certificate of merit and a commemorative medal. A cash award of 50 million yen is also presented for each prize field.

# Field : Transformation towards a sustainable society in harmony with nature



# **Contribution towards a sustainable world as founded in the 1972 report titled "The Limits to Growth"**



#### Dr. Dennis L. Meadows (U.S.A.)

Born : June 7, 1942 Professor Emeritus of Systems Policy, University of New Hampshire President, Laboratory for Interactive Learning

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#### Acceptance Speech

It is impossible with the time we have here for me to thank personally the dozens of mentors, hundreds of students, and thousands of colleagues who contributed to my education and my research. I hope it will suffice to say that it has been a privilege to work with each of them, and they have taught me very much.

I started my professional career in the physical sciences. I studied chemistry, and I worked in a large government laboratory. But then I shifted to the management sciences. Problems at the interface between the physical and the management sciences have been the focus of my work ever since - for the past forty years. Understanding how humanity's cultural norms, political systems, technological capabilities, and management practices can be brought into balance with the planet's limits has been an enormously challenging and rewarding life-long pursuit.

I envy one advantage of the physical scientists. They can learn new facts about nature at their own pace. They can race ahead of their audience being confident that sooner or later society will catch up, understand their discoveries, and benefit from their work. My field is fundamentally different. I cannot move far ahead of my audience. There is no meaningful science of sustainable development in the abstract. Nothing I have learned, nothing I have done has any real value, unless it is accepted and used widely by society.

It gives me no satisfaction whatsoever to develop a theoretical path to survival of our species. Sustainable development requires new understanding and different behavior. Therefore much of my professional effort has been devoted to communication and teaching - finding new ways to help people to understand the causes and consequences of limits and to change their current habits.

This prize will contribute much to that effort. It gives me the inspiration and the resources for another two decades of work. For that I am deeply thankful to you all.

# Field : Technological integration of medical science and engineering

# Contribution to tomographic imaging in nuclear medicine



Dr. David E. Kuhl (U.S.A.)

Born: October 27, 1929 Professor, Radiology, University of Michigan Medical School

#### Acceptance Speech

I am deeply honored to accept the Japan Prize today and to join the distinguished company of previous award recipients.

I thank The Science and Technology Foundation of Japan and particularly President Ito, Chairman Yoshikawa and the Selection Committee. I am grateful that you have chosen to recognize my role in the evolution of emission tomography in nuclear medicine.

Cross sectional imaging of targeted radioactive tracers is used now as a unique probe in evidence-based medical care, in scientific clinical research and in drug development. Emission tomography has benefited the health of men, women and children throughout the world. This success has come from efforts of talented scholars from many countries. It has come from close integrations of medical science, chemistry and engineering. The future is bright for this kind of molecular imaging.

I thank you for recognizing my contributions. I thank you as well for acknowledging the opportunity of emission tomography in nuclear medicine and how this discipline can aspire to the goals of the Foundation.

# **The Presentation Ceremony**



The Japan Prize Ceremony took place in the presence of their Majesties the Emperor and Empress, and with the attendance of 850 prominent guests, including politicians, government officials, diplomatic corps, businessmen, scholars and researchers, and media representatives. After the address by Prof. Yoshikawa, the Chairman of the Science and Technology Foundation of Japan, Dr. Kumagai, the Selection Committee Chairman, reported on the results of the selection process and introduced the laureates. Reasons for recognizing of the laureates' achievements with the prize were explained by the Panel Chairman, Dr. Kaya in the field of "transformation towards a sustainable society in harmony with nature" and by the other Panel Chairman, Dr. Kanazawa in the field of "technological integration of medical science and engineering." This was followed by the presentation of the Japan Prize Certificate, Medal and prize money of 50 million Japanese yen to the laureates. After the laureates' speeches, H. E. Mr. Kono, the Speaker of the House of Representatives, delivered the congratulatory address on behalf of the three branches of government. The Japan Prize presentation Ceremony formally concluded with a commemorative concert by the Tokyo Geidai Student Orchestra.



Their Majesties the Emperor and Empress attend the commemorative concert



Acceptance Speech by Dr. Meadows



Commemorative concert



Congratulatory address by H.E. Mr. Kono



Opening address by Chairman, Prof. Yoshikawa



Introduction of the laureates by Dr. Kumagai



Citation for the award by Dr. Kaya



Citation for the award by Dr. Kanazawa

# **JAPAN PRIZE**

# Banquet



Following the presentation ceremony, a banquet for the 2009 Japan Prize laureates was held at Imperial Hotel Tokyo on the evening of April 23 in the presence of Their Majesties the Emperor and Empress as well as 270 dignitaries including Japanese government officials, heads of diplomatic missions to Japan, and celebrities from various fields and their spouses.

A congratulatory address was delivered by H.E. Mr. Satsuki Eda, President of the House of Councilors.

Prior to closing the banquet, the two laureates gave speeches of acknowledgment and brought the banquet to its close.



Opening address by President Ito

Congratulatory address by H.E. Mr. Eda



Empress arrive at the banquet hall

His Majesty the Emperor with the spouses Acknowledgement by Dr. Meadows of the laureates





Acknowledgement by Dr. Kuhl

# **JAPAN PRIZE**

# Japan Prize Week

# Monday, April 20



Welcome Reception



Joint Press Conference



Courtesy call on the Japan Academy

### Wednesday, April 22



Commemorative Lectures



Visit to the Foundation Office



Courtesy Call on the Prime Minister

## Saturday, April 25



Sightseeing in Kyoto



Professional Luncheon at the FCCJ



Academic Round Table Discussion







# 2010 (26th) Japan Prize

The categories for the 2010 (26th) Japan Prizes are "Industrial Production and Production Tecnology" and "Biological Production and Environment". Candidates have been recommended through numerous letters of nomination received by the Foundation from all over the world. Japan Prize Selection Committee has been organized by the Foundation and the results will be announced in January 2010. The presentation ceremony will take place in April 2010.

#### Area of Studies I: mathematics, physics, chemistry, and engineering Fields eligible for the award: Industrial Production and Production Technology

#### **Background and rationale:**

Since the industrial revolution, the remarkable development of science and technology has significantly improved people's standard of living, thereby realizing the creation of a prosperous society not seen before in the history of mankind. Nevertheless, there are still many people in the world who have not reaped the benefits of this prosperity and it has also become clear that we must take into account the fragility of the earth's environment in our pursuit of science and technology. In view of these circumstances, we must continue to strive for further innovation in production technology for the truly prosperous future of mankind.

#### Achievement eligible:

The 2010 Japan Prize will be awarded to honor achievement that brings about remarkable progress in science and technology in the field of industrial production and production technology and that makes an outstanding contribution to society by improving the safety or convenience of the lives of people or by overcoming poverty through the creation of new products or industries, or improvement in productivity.

#### Area of Studies II: biology, agriculture, and medicine Fields eligible for the award: Biological Production and Environment

#### **Background and rationale:**

The existence of mankind has depended on the earth's biological resources in various forms in the past and will continue to do so. However, the earth's environment which supports our biological resources has been rapidly deteriorating. Furthermore, while innovations in technology have dramatically increased our capacity to produce food, the world population has been growing at an explosive rate and is surpassing the growth of the production capacity. In addition to protecting the environment and ensuring biodiversity, sustainable production is essential.

#### Achievement eligible:

The 2010 Japan Prize will be awarded to honor achievement that brings about remarkable progress in science and technology in the field of biological production and environment and that makes an outstanding contribution to society in the following ways: improving the everyday life of people, overcoming poverty by significantly increasing food production or improving food production efficiency, maintaining biodiversity, or realizing a pleasant living environment.

# The Science and Technology Foundation of Japan

The Foundation was established in 1982, aiming to contribute to further development of science and technology. In addition to recognizing outstanding achievements with the Japan Prize, the Foundation has been promoting knowledge and information on science and technology by hosting the "Easy-to-understand Science and Technology" seminars and awarding research grants to help nurture young scientists.

#### : "Easy-to-understand Science and Technology" Seminars

The Foundation holds a series of seminars on advanced technologies used widely in everyday life. In the seminars designed for students and the general public, experts in the related fields explain in plain terms the technologies that are also the focus of interest at that time. Since the first seminar was held in March 1989 over 20 years ago, almost 200 seminars have been held across Japan.

#### :: Research Grants

The Foundation provides research grants to scientists and researchers under 35 years of age. Every year, the Foundation selects projects in the same fields as the Japan Prize of that year and gives one million Japanese yen for a project. For 2009, 10 projects were selected from each of the two fields and 20 young scientists received the grants.

#### :: Stockholm International Youth Science Seminar (SIYSS)

Under the auspices of the Swedish Federation of Young Scientists and with the support of the Nobel Foundation, the Science and Technology Foundation of Japan sends two Japanese students to the annual Stockholm International Youth Science Seminar since 1987.