

JAPAN PRIZE NEWS

THE SCIENCE AND TECHNOLOGY
FOUNDATION OF JAPAN (JSTF)

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Japanese and American Scientists Awarded 2005(21st)Japan Prize

Their Majesties the Emperor and Empress Attend the Presentation Ceremony



The presentation ceremony of the 2005(21st) Japan Prize, the most prestigious and honored prize in the fields of science and technology, was held at the National Theatre in Tokyo on April 20, 2005.

The Prize is presented annually by the Science and Technology Foundation of Japan to scientists and researchers who have made substantial contributions to the advancement of science and technology and to the peace and prosperity of mankind.

The prize categories this year were "Information and Media Technology" and "Cell Biology." A total of 281 nominations were made by top scientists and academics around the world, 135 for the Information and Media Technology prize category and 146 for the Cell Biology prize category.

Out of those nominations, three scientists—two from Japan and one from America—were awarded the 2005 Japan Prize.

OUTLINE

The Japan Prize is awarded to world-class scientists and technologists 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. In principle, original achievements in science and technology are given priority during the selection process.

No distinction is made as to nationality, occupation, race, or sex. Only living persons may be named.

Fields of study for the prize encompass all categories of science and technology, with two categories 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 category. The award is intended for a single person, in principle, but small groups of researchers are also eligible.

Information and Media Technology

Achievement:

Pioneering Contributions to Natural Language Processing and Intelligent Image Processing

Dr. Nagao, Makoto (Japan)

President, National Institute of Information and Communications Technology



Dr. Nagao, Makoto has pioneered research in the fields of machine translation, natural language processing, and image processing, and has achieved extensive results that have had a significant impact on other researchers in this field. Notably, he developed a fully functional Japanese-to-English / English-to-Japanese translation system, and was the world's first advocate of example-based translation in machine translation. In image processing, he was the first to introduce feedback analysis mechanisms, which had a dramatic impact on many later research activities. He developed the world's first digital library prototype system incorporating natural language processing and image processing technologies, and has contributed to the new digital library era. In addition to being a pioneer, Dr. Nagao has been a leader in this field as well, for example as a founder of the International Association for Machine Translation and The Association for Natural Language Processing.

Cell Biology

Achievement:

Fundamental Contribution in Elucidating the Molecular Mechanisms of Cell Adhesion

Dr. Takeichi, Masatoshi (Japan)

Director, RIKEN Center for Developmental Biology

Dr. Erkki Ruoslahti (United States of America)

Distinguished Professor, The Burnham Institute



Cell adhesion is fundamentally important in the construction of tissues and organs. Dr. Masatoshi Takeichi and Dr. Erkki Ruoslahti pinpointed the essential core processes in the complex phenomena of cell adhesion and succeeded in elucidating the mechanisms at the molecular level. Their accomplishments are expected to fundamentally contribute to working out the etiology and developing therapy of serious diseases such as malignant tumors.

The Presentation Ceremony

Their Majesties the Emperor and Empress attended the presentation at the National Theatre in Tokyo on April 20, 2005. Some 1,000 prominent guests attended the ceremony, including H.E. Mr. Kono, Yohei, the Speaker of the House of Representatives, H.E. Mrs. Oogi, Chikage, the president of the House of Councillors, H.E. Mr. Machida, Akira the Chief Justice of the Supreme Court, numerous ambassadors to Japan, eminent scholars and researchers, and representatives from other fields including politics, finance, industry and the media.

The ceremony began with a rendition of Miki, Minoru's Overture Japan, a work composed specially for the ceremony and performed by the New Japan Philharmonic Orchestra under the direction of Enkoji, Masahiko. Foundation Chairman Yoshikawa,



Hiroyuki made the opening address and Dr. Kumagai, Nobuaki, Chairman of the 2005 Japan Prize Selection Committee, introduced the three laureates. After the chairmen of the two selection panels presented the reasons for their selections, Foundation President Dr. Ito, Masao presented the three laureates with their certificates of merit, commemorative medals and cash awards of 50 million yen for each category.

His Majesty the Emperor gave a congratulatory address honoring the three laureates. Finally, a congratulatory speech by H. E. Mr. Kono, Yohei, the Speaker of the House of Representatives, was delivered.

After the ceremony, New Japan Philharmonic Orchestra performed the commemorative concert.

Address by His Majesty The Emperor

On the occasion of the 21st Awarding Ceremony of the Japan Prize, I offer my sincere congratulations to the laureates, Doctor Makoto Nagao in the category of "Information and Media Technology" and Doctor Masatoshi Takeichi and Doctor Erkki Ruoslahti in the category of "Cell Biology."

Doctor Nagao led the research on machine translation by computers and built the foundation of machine translation technology, which is already put in practical use for translation of abstracts of scientific and technical papers. The example-based translation method, which Doctor Nagao introduced, is about to make two-way machine translation among various languages possible. In the field of image processing, he has developed technology for the analysis and recognition of facial photographs. Moreover, synthesizing the technologies in his research, he has made proposals on the ideal form of digital libraries.

Doctor Takeichi and Doctor Ruoslahti advanced research on cell adhesion, which is fundamental to the formation of tissues and organs. Doctor Takeichi and Doctor Ruoslahti



played decisive roles in elucidating the molecular mechanism of cell-to-cell adhesion and cell-to-extracellular-matrix adhesion, respectively. Their accomplishments are expected to contribute to illuminating the way tissues form and the causes of abnormal cellular behavior that occurs at times of illness and thus lead to overcoming diseases that are difficult to cure.

I express my deep respect to the three laureates whose research contributes significantly to putting the remarkable advances in science and technology to practical use for the welfare of humanity.

The Japan Prize is now in its 21st year since its inception. I would here like to extend my deep appreciation for the efforts made by all concerned in supporting the Prize over the years, and would also like to express my hope that the Japan Prize will, under the new leadership of Doctor Ito, Masao President, and Professor Yoshikawa, Hiroyuki Chairman, continue to contribute to the development of science and technology for the true happiness of humanity.



Their Majesties the Emperor and Empress arrive at the National Theatre



Opening address by Prof. Yoshikawa



Report on the Selection by Dr. Kumagai



Citation for the award presented by Dr. Aiso



Citation for the award presented by Dr. Fujii-Kuriyama



Congratulatory address by H.E. Mr. Kono



Banquet

Following the presentation ceremony, a banquet for the 2005 Japan Prize laureates was held at the Imperial Hotel in Tokyo on the evening of April 20 in the presence of Their Majesties the Emperor and Empress of Japan as well as 230 dignitaries including Japanese government officials, other ambassadors and ministers, and celebrities from various fields.

And a congratulatory address was made by H.E. Mrs. Oogi, Chikage, President of the House of Councilors.

Prior to closing the banquet, the three laureates gave speeches of thanks and brought the elegant state banquet to its close.



Toast by His Majesty The Emperor



Opening address by Dr. Ito



Congratulatory address by H.E. Mrs. Oogi



Acknowledgement by Dr. Nagao



Acknowledgement by Dr. Takeichi



Acknowledgement by Dr. Ruoslahti

2006(22nd) Japan Prize

The categories for the 2006 (22nd) Japan Prize are "Global Change" and "The Development of Novel Therapeutic Concepts and Technologies". Candidates have been recommended through numerous letters of nomination received by the Foundation from around the world. The 2006 (22nd) Japan Prize Selection Committee will be established in the Foundation and the results will be announced in January 2006. The presentation ceremony will take place in April 2006.

Category Area I: Environment Infrastructure Prize Category: Global Change

Human beings, as is widely understood, are imperiling the globe for this generation and for future generations through high consumption of energy and natural resources--the very foundations of society--and by intensive use of land. Scientific observation, conducted all over the world, has detected what is going on, and has pointed to the vulnerability of our environment. Countermeasures to the worldwide deterioration afoot were prepared. In consequence we see new technologies coming forward, aimed at letting us live in harmony with nature in a sustainable society, while husbanding scarce resources. New international regimes have developed and have built up momentum.

Category Area II: Health Care Therapeutic (Technology) Prize Category: The Development of Novel Therapeutic Concepts and Technologies

Recent life science and medical sciences have seen significant advancements that have led to a number of pivotal developments in the treatment of various diseases, including malignancies, infections, and lifestyle-related ailments. Such developments were built upon the discovery and invention of novel therapeutic concepts and technologies in the areas of ontogenesis and differentiation, as well as advances in the regeneration of cells, tissues, and organs and in the study of intermolecular interactions in those scientific domains.

The Japan Prize for 2006 will be awarded for significant accomplishments in the development of novel therapeutic concepts and technologies in the fields of biology, medicine, and medicinal chemistry, and the underlying research that have enabled such concepts and technologies.

Photo recollections of laureates

Dr. Nagao



◀ An active member of his junior high school's Student Newspaper Club

He liked "mimeograph printing" both for school projects and as a hobby.



In his high school "Chemistry Club" ▶
During three years he helped study the water quality of Lake Biwa.

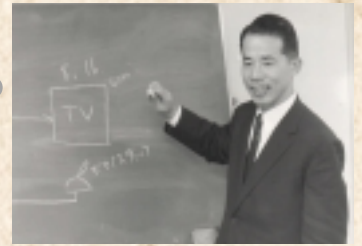


◀ At age 28, marriage! -- at Mikami Jinja (Shinto shrine), where his father was the chief priest, Shiga Prefecture

With marriage, a vow to the gods, and looking very happy at this time!

▶ An overnight study session with students - while working at his university office

He was always ready to guide his students and liked to deepen personal bonds through overnight "study outings."



Dr. Takeichi



◀ With his mother and younger sister and his giraffe doll - at age 5
Was he already especially fond of animals and other living things?



◀ Visiting the homes of former students living abroad

When traveling outside Japan, Dr. Takeichi always likes to visit the homes of former students and research team members and to renew and update friendships in this way.

Observing wild birds in Minami Karuizawa - ▶
during his high school years
During his high school years, he became an avid bird watcher.



▶ A picnic while bird-watching - in Ashiu Forest Research Station of the Field Science Education and Research Center Kyoto University.



Dr. Ruoslahti



◀ With his mother, elder brother and elder sister - 1940

Here he is - in bouncing high spirits - on his mother's lap.

Riding a motorboat on a lake with his elder sister - ▶
1956
Riding around the lake by motorboat was great fun during summer vacations.



◀ Hunting with his elder brother - 1960

Here he went on a hunting expedition with his elder brother. Their catch was not bad!

▶ His two grandchildren who are already interested in personal computers
They are already completely fascinated with personal computers! What exactly are they looking at?



Japan Prize Week



Welcome Reception, April 18



Courtesy Call on the Japan Academy, April 19



Joint Press Conference, April 18

The week of April 18 to 23, 2005, was designated as "Japan Prize Week" with many events.



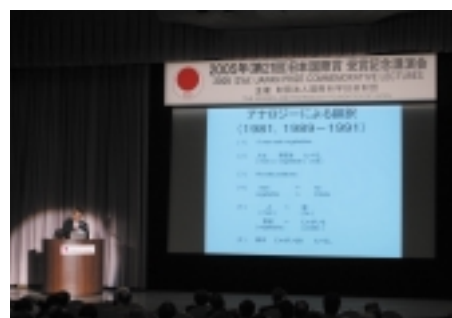
Academic Discussions, April 19



Courtesy Call on the Prime Minister, April 21



Holiday in Kyoto, April 23



Commemorative Lectures, April 19

Students volunteer support for Japan Prize Week

Students from various Universities attended the 2005 Japan Prize Week events.

The participants were Mr. Hashimoto, Okito (Tokyo University), Mr. Minohara, Makoto (Chiba University), Ms. Okada, Chisa (Japan Women's University), Ms. Orihara, Kanami (Showa University), Ms. Yamamoto, Aya (Chiba University),

Comments from Mr. Minohara follow:

It was very valuable for us to be able to help with administration of the Japan Prize. We could experience the work as staff and listen to the speeches of the prize winners. It increased our motivations, as future scientists. Thank you very much for providing us with such a valuable experience.

