

# JSPS Quarterly

Japan Society for the Promotion of Science



## FEATURE: JSPS Prize

### TOPICS

● JSPS Prize.....	2
● Fifth HOPE Meeting Held in Tokyo .....	7
● JSPS London Office Holds Briefings in Slovenia and Bosnia-Herzegovina .....	8
● JSPS Strasbourg Office Held Program Introductory Meeting in Belgium.....	8
● First JSPS Program Meetings in Italy.....	8
● JSPS Holds 18 <sup>th</sup> Japanese-German Symposium .....	9
● Japan-Sweden Science & Technology Innovation Symposium 2013 .....	9
● Seminar Held on ICT by Sweden Alumni Club.....	9
● "All Alumni Meeting" Held in Finland .....	10
● US Fellows Alumni Association Holds Science Forum.....	10
● Washington Office Holds Symposium on Climate Change.....	10
● Orientation Held for New NIH-Hosted JSPS Fellows .....	11
● Symposium Held with University of California, Berkeley .....	11
● Sixteenth Meeting of Japan-India Science Council Held .....	11
● Alumni General Assembly and RONPAKU Medal Award Ceremony Held in Thailand.....	12
● International Workshop on Man-Nature Coexistence Held in Nairobi.....	12
● Science Dialogue .....	13

No. **44**  
**2013**  
Summer

# Ninth Award of JSPS Prize

On 4 February, a ceremony was held to award the ninth JSPS Prize. Selected were 24 talented young researchers with excellent records of scientific inquiry and exceptional promise to be trailblazers of scientific research in Japan. The ceremony for the FY2012 Prize was held at the Japan Academy in the presence of Her Imperial Highness Princess Akishino.

## Selection of JSPS Prize Awardees

JSPS sent out requests for Prize nominations to 3,498 Japanese research institutions and academic societies, from which it received 243 in April. Adding the carryovers from the prior year, 371 nominees were screened by the researchers of JSPS's Research Center for Science Systems. Based on the results, the JSPS Prize Selection Committee, chaired by Dr. Leo Esaki (1973 Nobel laureate in physics) and comprising 12 members, made the final decision on the 24 awardees.

## Award Ceremony

The ceremony for awarding the JSPS Prize was held in conjunction with the awarding of the Japan Academy Medal. At the ceremony on 4 February, JSPS president Dr. Yuichiro Anzai offered an opening message, saying that this being the same year Dr. Shinya Yamanaka, a third JSPS Prize awardee, received the Nobel Prize, he looked forward to the ninth Prize winners pursuing their



Her Imperial Highness Princess Akishino and JSPS Prize awardees

various fields of research with equal devotion and vigor while going on themselves to make milestone scientific advances. His remarks were followed by a report on the selection process from Dr. Esaki. Then, Dr. Anzai presented the 24 recipients with a certificate of merit, a medal, and a purse of ¥1.1 million.

A tandem ceremony was held to confer the Japan Academy Medal on six of the JSPS Prize recipients. First, Japan Academy president Prof. Masaaki Kubo delivered welcoming remarks, after which Prof. Yoichi Shinkai, chairman of the Academy's selection committee, explained the vetting process. Then, Prof. Kubo presented the medal and a commemorative gift to each of the awardees.

Princess Akishino offered remarks and Mr. Hideki Niwa, Parliamentary Secretary for Education, Culture, Sports, Science and Technology, gave a congratulatory message on behalf of the Minister of Education, Culture, Sports, Science and Technology. To conclude the meeting, a message of appreciation on behalf of the Prize recipients was delivered by Dr. Akira Ohtomo, professor, Graduate School of Science and Engineering, Tokyo Institute of Technology.

After the ceremony, a celebration party was held. Attended by Princess Akishino, the Prize recipients, their guests, and the ceremony attendees, an atmosphere conducive to pleasant conversation was enjoyed by all.

## Report and Remarks by Dr. Leo Esaki at JSPS Prize Award Ceremony

*As chair of the JSPS Prize Selection Committee, I wish to describe the selection process for the ninth annual JSPS Prize and to offer some words of encouragement to the young recipients.*

*In February 2012, a request for referrals was sent out to universities, research institutes and related academic societies. Altogether 371 individuals were nominated to the Selection Committee. Over a period of approximately five months from May 2012, the Research Center for Science Systems, established within the Japan Society for the Promotion of Science, carried out the preliminary screening, based on the results of which the 12-member Selection Committee chose the recipients for this year's JSPS Prize.*

*Meeting on 23 October, the Committee selected you, the 24 gifted young researchers gathered here, as the 2012 JSPS Prize recipients. In coming up with today's result, the members of the Committee did all within the limits of our knowledge and wisdom to evaluate fairly the research accomplishments and future prospects of each person within the very rich field of nominees. When you consider the fact that Prize recipients constitute only about 6% of the initial nominees (one out of 15.46), its selection process is very competitive.*

*On your selection for this prestigious award, I wish to extend both you and the colleagues who support your work a most hearty word of congratulations. Unmistakably, each of you is an exceptionally talented researcher.*

*I look forward to this Prize giving you added impetus in advancing your research initiatives in ways that will influence the future of Japan.*

*Unlike all of you young researchers, at my rather advanced age one doesn't normally receive honors or awards. Yet, last December the IEEE Electron Devices Society decided to confer the status of "celebrated member" on just those members who have contributed greatly to society. Subsequently, the Society held the conferral ceremony in San Francisco on 10 December, auspiciously the same day as Dr. Shinya Yamanaka was awarded the Nobel Prize. I among other members was honored with a showering of praise by our IEEE colleagues. At the San Francisco*

*International Airport on my way back to Japan, I bought a book to read on the plane. Written by Haruki Murakami, it had the strange title What I Talk about When I Talk about Running. While I thought that “What I talk about running” should suffice, for some reason the seemingly superfluous “When I talk about” was added. When I got back to Japan, I found it to be a free translation of the book’s Japanese title.*

*What it was about the book that first grabbed my attention was the title of its preface, “Suffering Is Optional.” For me, “option” is a weighty word, especially in*

*the context of freedom of choice. When some 50 years ago I chose the United States as the place to do my research, it was because in the sphere of research America offered bountiful options. Without those options, I would not have been able to advance my basic research.*

*I understand that like Murakami, Dr. Yamanaka is also a marathon runner. In the book, the words “Suffering is optional” are a mantra uttered by a marathon runner during a grueling race. The full mantra goes “Pain is inevitable, suffering is optional.” That is, how one copes with*

*pain is “optional.” Here, Murakami was alluding to the most important aspect of marathon running: When a runner in the final stretches of a race hurts in a way that feels unbearable, it is up to him whether to give up or endure still more pain.*

*In this way, Murakami teaches us that the path to success in research as well is to press on in one’s work and, when approaching its apex, to exert the extra measure of courage needed to make the arduous ascent. May I ask each of you to follow this counsel?*

## Ninth (FY2012) JSPS Prize Awardees

Humanities and Social Sciences		
<b>Daisuke Ikemoto</b>	Associate Professor, Faculty of Law, Meiji Gakuin University	“European Monetary Integration 1970-79: British and French Experiences”
<b>Sayaka Oki</b>	Associate Professor, Graduate School of Integrated Arts and Sciences, Hiroshima University	“A Study on the French Royal Academy of Science from the Viewpoints of History of Science and Technology and Social History”
<b>Hidehiko Takahashi</b>	Associate Professor, Graduate School of Medicine, Kyoto University	“Interdisciplinary Research on the Neural Mechanism of Emotional Decision-Making”
<b>Hiro Hirai</b>	Research Fellow, Center for the History of Philosophy and Science, Radboud University	“Historical Studies on Life and Matter Theories in Renaissance and Early Modern Europe”
<b>Noriaki Matsushima</b>	Professor, Institute of Social and Economic Research, Osaka University	“Theoretical Analysis of Industrial Organization”
Mathematics; Physical Sciences; Chemistry; Engineering Sciences		
<b>Shoji Asai</b>	Associate Professor, Graduate School of Science, The University of Tokyo	“Study of Higgs Particle Using the Energy-Frontier Collider LHC”
<b>Katsunari Oikawa</b>	Associate Professor, Graduate School of Engineering, Tohoku University	“Phase Diagrams Using Computational Thermodynamic and Its Application for New Alloy Development”
<b>Akira Ohtomo</b>	Professor, Graduate School of Science and Engineering, Tokyo Institute of Technology	“Metallic Conduction at Well-Defined Insulating Oxide Interface”
<b>Hirotsugu Ogi</b>	Associate Professor, Graduate School of Engineering Science, Osaka University	“Development of Ultrasensitive Thin-Film Oscillator Biosensor”
<b>Ken-ichi Kawarabayashi</b>	Professor, Principles of Informatics Research Division, National Institute of Informatics, Research Organization of Information and Systems	“Application of Advanced Graph Theory to Discrete Mathematics and Theoretical Computer Science”
<b>Tsutomu Suzuki</b>	Professor, Graduate School of Engineering, The University of Tokyo	“Direct Analysis of RNA Molecules by Mass Spectrometry Approaches Biological Processes”
<b>Eijiro Sumii</b>	Associate Professor, Graduate School of Information Sciences, Tohoku University	“Proof Method of Program Equivalence by Environmental Bisimulation”
<b>Kazuhiro Tsukagoshi</b>	Principal Investigator, International Center for Materials Nanoarchitectonics, National Institute for Materials Science	“Nano-Electronics Researches Based on Electrical Conduction Control in Nano-Carbon Conductors”
<b>Kenji Nakanishi</b>	Associate Professor, Graduate School of Science, Kyoto University	“Energy Concentration and Nonlinear Scattering Theory for Nonlinear Wave and Dispersive Equations”
<b>Hiromichi Niikura</b>	Associate Professor, Faculty of Science and Engineering, Waseda University	“Dynamical Measurements of Molecular Wavefunctions with Attosecond Time-Resolution”
<b>Shuichi Murakami</b>	Professor, Graduate School of Science and Engineering, Tokyo Institute of Technology	“Theoretical Study of the Spin-Hall Effect and the Quantum Spin-Hall Effect”
<b>Shigehiro Yamaguchi</b>	Professor, Research Center for Materials Science, Nagoya University	“Creation and New Functions of $\pi$ -Electron Materials with Main Group Elements”
Biological Sciences; Agricultural Sciences; Medical, Dental, Pharmaceutical Sciences		
<b>Masahito Ikawa</b>	Professor, Research Institute for Microbial Diseases, Osaka University	“Study on Reproductive Medicine Using Genetically Manipulated Animals”
<b>Yuji Ikegaya</b>	Associate Professor, Graduate School of Pharmaceutical Sciences, The University of Tokyo	“Clarification of the Cooperation Principle of Brain Circuitry Systems Using Functional Imaging”
<b>Akira Inoue</b>	Associate Professor, Clinical Research, Innovation and Education Center, Tohoku University Hospital	“Individualized Treatment for Advanced Lung Cancer with Molecular Targeting Agents”
<b>Yosuke Kaifu</b>	Senior Researcher, Department of Anthropology, National Museum of Nature and Science	“Studies on Human Evolution and Dispersal in Asia”
<b>Hiroyuki Kasahara</b>	Senior Research Scientist, Plant Science Center, RIKEN	“Elucidation of the Main Auxin Biosynthesis Pathway in Plants”
<b>Motomasa Tanaka</b>	Team Leader, Brain Science Institute, RIKEN	“Understanding Biological Phenomena Caused by Protein Misfolding and Aggregation”
<b>Hideaki Nojiri</b>	Associate Professor, Biotechnology Research Center, The University of Tokyo	“Molecular Bases of Xenobiotic-Degrading Capacity of Environmental Bacteria”

Titles and affiliations current as of 1 December 2012

# Young Researchers at Vanguard of Science in Japan

## Awardees Speak about Their Work and Aspirations

### Humanities and Social Sciences

#### Social Recognition of Science as Complex Historical Process: the Case of Royal Academy of Science of Paris in the 18<sup>th</sup> Century

I explore the history of science and technology along with its surrounding society. In particular, my interest is to see how the position of science and that of scientists were defined in Early Modern Europe. For that purpose, I have especially been studying the case of the Royal Academy of Sciences of Paris in France (1666-1793). It was the first academy dedicated to only natural science in Europe in an era when natural science was not fully recognized in society and the question "What is the usefulness of science?" was regularly asked. By analyzing historical sources, my research has revealed the status of this academy's evolution within society: Starting from a circle of talented scholars living on pensions under the patronage of Louis XIV, it grew into a group of experts in science and technology upon which the royal government relied to carry out some big public works projects in Paris.

Through this research, I found the societal

recognition of science to be a complex process, one which depended not only on scientific advancement but also on various political and even cultural factors like relationships between scientists and the government and trends in intellectual movements.

The next step in my research will be to broaden my view to other scientific academies in provinces of France that were mostly supported by local authorities but also came under the influence of the Academy of Science of Paris, financed by the King. I want to elucidate the strategies of these provincial academies in the face of inequality in both power and money. I think it is important to trace and understand the role of institutions on the "peripheries" of scientific history, especially nowadays when so many people take too much for granted the centralization of scientific activities.



#### Dr. Sayaka Oki

2010–present: Associate Professor, Graduate School of Integrated Arts and Sciences, Hiroshima University  
 2009: Global COE Researcher, Brain Science Institute, Tamagawa University  
 2008: Received Ph.D. from The University of Tokyo  
 2005: JSPS Postdoctoral Fellow, The University of Electro-Communications  
 2000: JSPS Doctoral Course Fellow, The University of Tokyo  
 1998: Graduated from The University of Tokyo

#### Theory of Industrial Organization

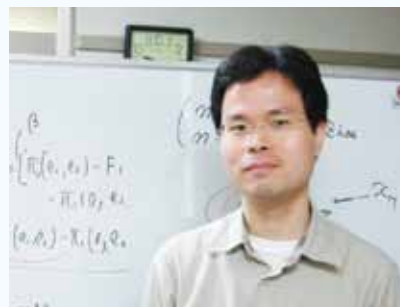
We can find many interesting corporate activities in the real world. My co-authors and I have provided game theory explanations for such interesting real-world examples.

In the 20th century, herd behavior was often observed by private firms in many mixed markets in which state-owned public firms compete against profit-maximizing private firms. Our theoretical model shows that such behavior inevitably arises in equilibrium absent regulation on the firms, which implies that the existence of public firms in itself causes herd behavior by private firms. Furthermore, incorporating foreign firms into our basic model, we have extended it to show that the product positions of foreign firms are dissimilar to those of the domestic private firms exhibiting herd behavior.

It is sometimes observed that leading firms disclose their technological knowhow to rivals. Such disclosure would appear to help, rather than harm, the rivals. Why, then, do leading firms take such action? Our supposition is that it is because such action helps to

stabilize rival firms, which in turn increases their number. Our theoretical model shows that an increase in the number of rival firms can incentivize leading firms to make more technological investment. This thrust by the leading firms diminishes the incentive of rivals to make their own technological investments, which ultimately benefits the leading firms.

As a next stage, I have started to investigate competition and antitrust policies, which have traditionally been the purview of law researchers. Although formal economic analysis of these policies provides a useful framework to understanding how market competition works, this research base is still poorly developed in Japan. My co-authors and I have therefore written several papers concerning competition policy including exclusive dealing contracts and resale below-cost laws. Constructing a research base for competition and antitrust policies has become one of my important research endeavors.



#### Dr. Noriaki Matsushima

2011–present: Professor, Institute of Social and Economic Research, Osaka University  
 2009: Associate Professor, Institute of Social and Economic Research, Osaka University  
 2005: Associate Professor, Graduate School of Business Administration, Kobe University  
 2004: Associate Professor, Faculty of Economics, Shinshu University  
 2001: Assistant Professor, Faculty of Economics, Shinshu University  
 2001: Received Ph.D. from Tokyo Institute of Technology  
 1996: Graduated from Tokyo Institute of Technology

## Mathematics; Physical Sciences; Chemistry; Engineering Sciences

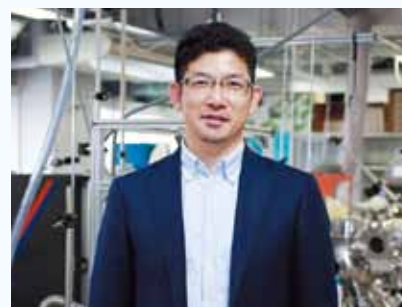
### Creation of Atomistically Controlled Metal Oxide Interfaces: Demonstration of Metallic Conduction at Boundaries between Insulating Materials

Many intriguing phenomena, such as high- $T_c$  superconductivity, ferromagnetism, ferroelectricity and thermoelectricity, occur in naturally layered structures of transition-metal oxides, leading to growing interest in the epitaxial synthesis of new compounds upon layer-by-layer growth in artificially layered structures. The focus of interest in our research has been to create of the kind of heterostructures that allow one to encounter new and exciting phenomena. To make this happen, we had to first eliminate defects that prevent the formation of delicate emergent states and, then, accomplish with atomic-level precision the thin-film growth of complex oxides.

For the thin-film growth, we developed a vacuum system that enables rapid optimization of the growth condition, making it possible to realize atomically abrupt interfaces and nearly identical oxygen stoichiometry. We have investigated two complementary systems that exhibit high-mobility electrons confined at their polar interfaces. In the first, we found a metallic state at an interface between two

band insulators, SrTiO<sub>3</sub> and LaAlO<sub>3</sub>, in which naturally arising polarity discontinuity introduces excess electrons in the SrTiO<sub>3</sub> insulator. As a result, dramatic magnetoresistance oscillations appeared at low temperatures. In the second system, we fabricated ZnO/MgZnO heterostructures to attain sufficiently high electron mobility to observe quantum Hall-effect that typically occurs only in extremely pure two-dimensional metals. It revealed that a two-dimensional metallic state is formed by strong built-in potential arising from a spontaneous polarization mismatch.

This level of control shows a clearer path toward using such materials in applications as varied as advanced computing and clean energy production. Moreover, the work consummates the marriage of the two disparate worlds of solid-state chemistry and device physics, providing greater impetus for pursuing similar high device quality in other compound systems to advance both science and technology.



**Dr. Akira Ohtomo**

2009–present: Professor, Graduate School of Science and Engineering, Tokyo Institute of Technology  
 2009: Associate Professor, Institute for Materials Research, Tohoku University  
 2002: Assistant Professor, Institute for Materials Research, Tohoku University  
 2000: Postdoctoral Member of Technical Staff, Bell Laboratories, Lucent Technologies  
 2000: Received Ph.D. from Tokyo Institute of Technology  
 1997: JSPS Doctoral Course Fellow, Tokyo Institute of Technology  
 1995: Graduated from Tokyo Institute of Technology

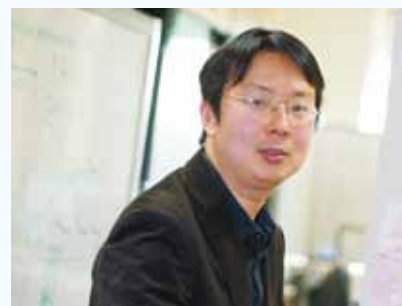
### Interdisciplinary Research on Large Networks: Advanced Graph Theory and Application Development

In modern society, enormous networks of extreme diversity and complexity exist, and they fulfill an important role in our lives. Among them, networks familiar to us, including the Web as well as Facebook and Twitter, continue to expand daily, currently having become gigantic structures each used by around  $10^9$  people. Such gigantic networks form “graph structures,” with “nodes” corresponding to the users and “edges” corresponding to the networks joining the users.

My main contribution stems from two aspects. One is a theoretical contribution to large graphs: “Algorithmic graph minor theory,” initiated by me and my collaborators, makes possible a deeper understanding of the topological properties of large graphs. The other is an algorithmic contribution: Based on theoretical research advanced together with my collaborators, I have developed several very efficient algorithms for graphs.

In the near future, it is expected that opportunities to apply large graphs will increase in product development and product management in private-sector companies, government-managed databases on individual citizens, and even in personal information searching. In handling such enormous volumes of data, it is not realistic to expect that individuals will have access to high-performance computers. Therefore, I am working to theoretically analyze a “large graph” with over  $10^{10}$  nodes, and develop fast algorithms for it based on my theoretical research.

Theoretical researchers are currently playing an important role in cutting-edge IT companies. In step with them, one of my ultimate goals is to send a message regarding the importance of theoretical research in large network analysis from the academic to the corporate world.



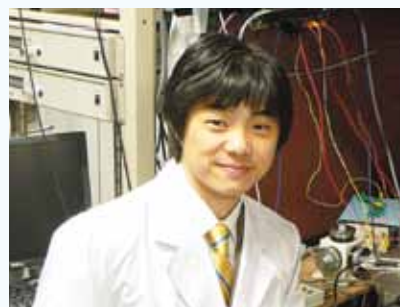
**Dr. Ken-Ichi Kawarabayashi**

2009–present: Professor, Principles of Informatics Research Division, National Institute of Informatics (NII)  
 2007: JSPS Postdoctoral Fellow for Research Abroad, Simon Fraser University  
 2006: Associate Professor, Principles of Informatics Research Division, National Institute of Informatics (NII)  
 2003: Assistant Professor, Graduate School of Information Sciences, Tohoku University  
 2001: Received Ph.D. from Keio University  
 2000: JSPS Doctoral Course Fellow, Keio University  
 1998: Graduated from Keio University

**Biological Sciences; Agricultural Sciences; Medical, Dental, Pharmaceutical Sciences****Study on Brain Circuit Operation Using Functional Optical Imaging**

Brain function emerges from complex networks in which diverse types of neurons are interconnected, but the mechanisms underlying their large-scale dynamics are poorly defined due to a lack of suitable experimental methods. Our understanding of them still relied on “compiled” population statistics, *i.e.*, inferring from pieces of evidence that are obtained independently from individual neurons and synapses, or inferring from bulk recording of averaged neuronal response. To reveal how neurons function together and exhibit collective dynamics, I devised a large-scale optical technique, called “functional multi-neuron calcium imaging” (fMCI), to simultaneously monitor a population of individual neurons. fMCI offers the following remarkable advantages: (1) simultaneous recording from up to 10,000 neurons in a local circuit; (2) single-cell and single-spike resolution; and (3) identifiable locations and types of neurons. This confluence of assets

makes fMCI a powerful tool for capturing activity in intact and abnormal neuronal networks. Using it, I discovered that neuronal activity patterns are highly organized in space and time. For example, I found that a neuronal network emits ongoing spiking activity in which many specific configurations of multi-neuronal spikes are repeated in parallel. These patterns are orchestrated through the wiring structure of the network and are evident even at the single-synapse level along individual neuronal fibers. These findings could not have been made by conventional experimental methods nor could they have been predicted from conventional concepts of neuronal networks. In the future, I will expand this research approach and thereby shed greater light on the basic principles underlying brain circuit operation.

**Dr. Yuji Ikegaya**

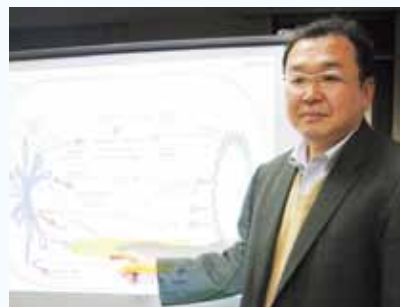
2007–present: Associate Professor, Graduate School of Pharmaceutical Sciences, The University of Tokyo  
 2002: Postdoctoral Research Scientist, Columbia University  
 1998: Assistant Professor, Graduate School of Pharmaceutical Sciences, The University of Tokyo  
 1998: Received Ph.D. from The University of Tokyo  
 1995: JSPS Doctoral Course Fellow, The University of Tokyo  
 1993: Graduated from The University of Tokyo

**Hunting of Bacterial Function Involved in Bioremediation**

Bioremediation, the use of microbial metabolism to remove pollutants, is a methodology that is suitable for large-scale polluted sites. To remediate the environment polluted with highly recalcitrant organic chemicals, the degradation abilities of various types of bacteria have been investigated to achieve effective decontamination of pollutants. To this end, it is important to understand the mechanisms underlying functions of microorganisms that can degrade such pollutants; for example, mechanisms of effective expression of the degradative genes, effective catalysis of degradation enzymes, cellular function of microorganisms as the degradation machinery, and behavior in the natural conditions of microorganisms. Comprehensive understanding of these mechanisms is indispensable for profitable utilization of useful microorganisms that, potentially, have the ability to degrade pollutants.

We have investigated the degradation function of various bacteria using carbazole, a nitrogen-containing aromatic compound occurring in crude oil and coal tar. Our research

covers the genetics of degradative genes, genomics of degrading bacteria, enzymology of degradative enzymes, and molecular ecology of degrading bacteria in the natural environment. For example, we have succeeded in elucidating the structure and function of carbazole 1,9a-dioxygenase, which catalyzes the first reaction in the carbazole degradation pathway, in substrate recognition and inter-component electron transfer. Similar to other degradative genes, we found that carbazole degradative genes were located on the plasmid. We successfully clarified a portion of the hidden mechanisms of interaction between the plasmid and host chromosome regulating the host phenotype, including degradation ability and host behavior in the natural environment. These results may provide a promising lead to elucidating the regulation of bacterial functions in nature, and such information may be applied to create better methodologies not only for bioremediation but also for other microbiology-related industries such as agriculture, food processing, and health care.

**Dr. Hideaki Nojiri**

2013–present: Professor, Biotechnology Research Center, The University of Tokyo  
 2002: Associate Professor, Biotechnology Research Center, The University of Tokyo  
 1999: Lecturer, Biotechnology Research Center, The University of Tokyo  
 1998: Received Ph.D. from The University of Tokyo  
 1995: Assistant Professor, Biotechnology Research Center, The University of Tokyo  
 1991: Graduated from The University of Tokyo

## Fifth HOPE Meeting Held in Tokyo

From 2008, JSPS has been holding annual HOPE Meetings to bring together doctoral students and young researchers from the Asia-Pacific in a setting that engages them in face-to-face discussions with Nobel laureates and other distinguished scientists, while also giving them a unique opportunity to interact and jell with peers from around the region.



HOPE Meeting  
Prof. Capecchi answering questions

The fifth HOPE Meeting in this series was held in Tokyo during the period from 26 February through 2 March. It was chaired by Prof. Makoto Kobayashi, director of JSPS's Research Center for Science Systems and 2008 Nobel laureate in physics. Themed "Life Sciences and Related Fields," this year's meeting included for the first time participants from South Africa. Altogether, some 98 doctoral students and young researchers in predominately fields of the life sciences from countries/regions including Japan participated in the meeting, receiving lecturers from seven Nobel laureates and two other world-leading researchers.

In the opening ceremony on the first day, welcoming remarks were offered by Prof. Kobayashi and JSPS president Dr. Yuichiro Anzai, followed by a message from Mr. Kanji Fujiki, Deputy Minister of Education, Culture, Sports, Science and Technology. At a welcome reception that evening, a video-recorded message especially prepared by Prof. Shinya Yamanaka, 2012 Nobel Prize recipient in physiology or medicine, was played to encourage the young participants.

Over the five days of the meeting, the participants engaged in small group discussions with the eminent lecturers, deriving both edification and exhilaration from this direct learning experience. Concurrently, they took advantage of the opportunity that the meeting provided them to report on their own research activities through flash talks and poster presentations. Eating and lodging together over the course of the event, the participants also divided up into small multinational groups to prepare and deliver team presentations, allowing them to make close friends and colleagues with people of their own generation who hail from different backgrounds. They also made an observation tour of Japanese research facilities and cultural sites while deepening their perspective of Japanese culture by attending a concert conducted with Japanese musical instruments and experiencing firsthand a variety of cultural elements such as the tea ceremony.

Putting to use the new knowledge they gained and networks they seeded at this HOPE Meeting, the participants are expected to go on to soar like eagles as they vigorously pursue their research within the global science community.

### Side Events

In tandem with the HOPE Meeting, a HOPE Dialogue meeting was held on the third day, in which Professors Capecchi, Ciechanover and Kobayashi engaged 48 students from three high schools in and around Tokyo in an exchange of views in English. In their conversations with the students, the lecturers talked about their own experiences in science during their high school and college days, spurring a spirited run of questions and answers that delved into such subjects as the future of science and what is expected of high school students.



HOPE Dialogue  
Prof. Ciechanover talking with students

Then, on the last day, a HOPE Meeting Jr. was held to give elementary and junior high school students a closer familiarity with science. Venued at the co-hosting National Museum of Emerging Science and Innovation (Miraiakan), the meeting assembled 19 openly recruited students. They conducted an experiment led by Professors Shirakawa and Kobayashi, who also answered the students' questions and accompanied them on a tour of the museum.



HOPE Meeting Jr.  
Prof. Shirakawa explaining experiment to students

#### Fifth Hope Meeting Lecturers

Prof. Susumu Tonegawa, 1987 Nobel Laureate in Physiology or Medicine  
 Prof. Mario Renato Capecchi, 2007 Nobel Laureate in Physiology or Medicine  
 Prof. Hideki Shirakawa, 2000 Nobel Laureate in Chemistry  
 Prof. Ryoji Noyori, 2001 Nobel Laureate in Chemistry  
 Prof. Aharon Jehuda Ciechanover, 2004 Nobel Laureate in Chemistry  
 Prof. Leo Esaki, 1973 Nobel Laureate in Physics  
 Prof. Makoto Kobayashi, 2008 Nobel Laureate in Physics  
 Prof. Gunnar Öquist, Professor Emeritus, Umeå University  
 Dr. Suzanne Shale, Senior Researcher, University of Oxford

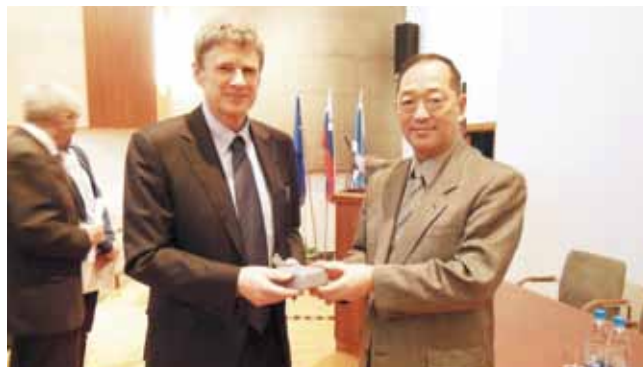
## JSPS London Office Holds Briefings in Slovenia and Bosnia-Herzegovina

From 18-21 February, the staff of JSPS London crossed the English Channel to hold briefings on JSPS programs in Slovenia and Bosnia-Herzegovina.

In Slovenia, these meetings were held at the Jožef Stefan Institute and the University of Ljubljana. The Jožef Stefan Institute is the country's largest research institution with some 930 affiliated researchers. About 50 researchers attended the briefing at the Institute, which carries out an energetic program of joint research with Japan and other countries. At the other venue, University of Ljubljana, about 200 students are enrolled in its Japanese studies program. Assembling 15 participants, the briefing revealed some of the creative ways in which the attending Slovenian researchers are carrying out exchanges with Japan.

In Bosnia-Herzegovina, the briefing was given at the Sarajevo School of Science and Technology, the country's only private university. It was attended by about 30 students and researchers.

In both countries, the participants asked volleys of questions about JSPS's fellowship and joint-research programs. In Slovenia, where research exchange with Japan is particularly vigorous, the first "alumni



Directors of Jožef Stefan Institute and London Office exchanging gifts

networking event" was held. It brought together 35 researchers who have come to Japan under JSPS programs. They engaged in a spirited discussion that included such topics as establishing a JSPS alumni association in their region.

JSPS London Office

## JSPS Strasbourg Office Held Program Introductory Meeting in Belgium

On 4 February, the JSPS Strasbourg Office made a visit to the University of Liege in Belgium to hold a program introductory meeting in the Colonster Castle. Liege is part of Belgium's French



University tour with Prof. Marchal (left)

speaking region, where many people speak not only French but also English and German on a daily basis. With this geographical location giving it a unique openness to other countries, the university is vigorously engaged in international exchanges.

The JSPS staff was welcomed by vice-rector Prof. Jean Marchal, who introduced the university's international programs. In addition to the JSPS program presentation, Dr. Jacques Fattaccioli, a board member of the JSPS French Alumni Association, gave a talk about his research stay in Japan. He was followed by presentations from two JSPS alumni: Prof. Jacques Mainil, who is doing joint research in veterinary science with the University of Miyazaki, and Prof. Arlette Noels, who had conducted lectures and other activities under a JSPS invitation fellowship at Tokyo University's Institute for Cosmic Ray Research.

JSPS Strasbourg Office

## First JSPS Program Meetings in Italy

On 5-6 March, the JSPS Strasbourg Office held consecutive program meetings at the Politecnico Di Milano, National Research Council (CNR), and the University of Milan. This being the first time for the office to hold JSPS program introductory meetings in Italy, they drew a large number of researchers and doctoral students at each of these venues.

At Politecnico Di Milano, which is one of Italy's preeminent technical universities, the JSPS staff were welcomed by rector Prof. Giovanni Azzone and vice rectors Prof. Alessandro Balducci and Prof. Donatella Sciuto. Prof. Marco Imperadori introduced the university's tradition, history and research specializations. Then, we were led on two facility visits: one to the university's Chemistry, Material and Chemical Engineering Department and the other to its Department of Architecture and Urban Studies.

At CNR, the directors of eight institutes described their research areas. For example, Dr. Rinald Psaro, chairman of the Institute of Molecular Science and Technologies (ISTM), introduced its



With Prof. Azzone (center) at Politecnico di Milano

programs. Dr. Gianluca Pozzi also of ISTM coordinated visits for us to the Institute for Macromolecular Studies and Institute of Industrial Technologies and Automation, in addition to ISTM's facilities.

JSPS Strasbourg Office



## JSPS Holds 18<sup>th</sup> Japanese-German Symposium

On 26-27 April, the JSPS Bonn Office and German JSPS Club joined together to hold the eighteenth Japanese-German Symposium, this year on the theme “Art and Science.” Venued in Cologne in the central-western part of Germany, the event assembled more than 180 mostly alumni members. In addition to research advanced from art history perspectives, the symposium featured lectures on such subjects as art works using interactive digital media, *Hokusai manga* (Edo period sketches) studied from a cognitive neuroscience angle, and the tradition and scientific evolution of East Asian ceramics. Eight German and Japanese researchers, curators and artists delivered these lectures. Adding a special Japanese ambience to the event was a *shakuhachi* flute performance by a German master of the art hailing from Mainz.

Recently, a prize had been established by the German JSPS Club to be awarded to researchers who are making superb contributions to advancing exchange and building networks between Japan and the German-speaking region of Europe. At the award ceremony that followed the lecturers, one German researcher and one Germany-based Japanese researcher were given the prize, which as an added

bonus included a roundtrip air ticket between the two countries.

The program of the symposium and the lecturers’ CVs and abstracts are posted on the Bonn Office’s website (<http://www.jspb-bonn.de>).

JSPS Bonn Office



On grounds of Japan Cultural Institute in Cologne

## Japan-Sweden Science & Technology Innovation Symposium 2013

On 7-8 March, the JSPS Stockholm Office teamed up with the Japanese Embassy in Sweden and the Chemical Society of Japan to hold Japan-Sweden Science & Technology Innovation Symposium



Dr. Yoshino, center, in discussion with audience

2013 titled “Lithium Ion Battery (LIB), the Inception, Development and Future.” These annual symposiums are convened to widely disseminate milestone scientific and technological developments being advanced in Japan. This year’s featured a presentation by LIB-inventor Dr. Akira Yoshino, Asahi Kasei Corporation, who spoke about the battery’s development and its future outlook.

With cooperation from the Royal Swedish Academy of Engineering Sciences and Chalmers University of Technology, the symposium was held in both Stockholm and Gothenburg. Attending the event at the two venues were some 180 people, including university and corporate researchers and inventors, who asked questions that spanned a spectrum from scientific development to commodification. Throughout, the symposium enjoyed a friendly yet animated atmosphere.

Each year the office holds these symposiums on different themes in an effort to strengthen Japan’s persona within Sweden’s academic community.

JSPS Stockholm Office

## Seminar Held on ICT by Sweden Alumni Club

On 8 March, the JSPS Sweden Alumni Club (SAC) held its annual seminar, this time on the theme “ICT-ethics: Sweden and Japan.” Held at Linköping University and organized by Dr. Elin Palm, the seminar featured a presentation by Prof. Kiyoshi Murata, School of Commerce, Meiji University, who was invited from Japan. The event advanced an energetic discussion on the ramifications of ICT-prolific society among researchers from mainly Linköping and Uppsala Universities. It focused in on such issues as people’s perceptions and expectations regarding info-communication technologies, how to secure privacy and property rights within an intensifying ICT environment, and the role played by ICT in globalization.

JSPS Stockholm Office director Prof. Yoshiaki Fujii took



At Linköping University

advantage of the occasion to introduce JSPS’s fellowship and other programs as well as SAC’s activities.

JSPS Stockholm Office

## “All Alumni Meeting” Held in Finland

On 13 March, the Embassy of Japan in Finland, the Finnish Institute in Japan, Hokkaido University Helsinki Office, and JSPS Stockholm



Alumni members of each institution

Office, all of which support Japan-related alumni associations in Finland, jointly held the first Finland-Japan All Alumni Meeting on the theme “Research and Study Possibilities in Japan.” The event brought together some 80 alumni—namely, Finnish students and researchers who have been dispatched from these organizations to Japan—in a friendly get-acquainted gathering. Alumni representing each organization told about their experiences in Japan, while representatives of the organizations introduced their exchange-student and joint-research programs.

This was the first time for such an all alumni get-together to be held in Finland. Having provided the participants an ideal opportunity to create exchanges with one another, JSPS Stockholm Office plans to continue holding these meetings in the future.

JSPS Stockholm Office

## US Fellows Alumni Association Holds Science Forum

On 1 February, the JSPS US Fellows Alumni Association held its third Multidisciplinary Science Forum, this time at Chapman University in California. It was attended by some 60 alumni members and Chapman faculty and students.

Following a keynote address delivered by Prof. Menas Kafatos of Chapman University, three sessions were held on the themes: Social Sciences and Humanities; Chemistry, Biology and Medical Sciences; and Math, Physics, and Engineering, each featuring reports on the latest cutting-edge research being advanced in these cross-disciplinary fields. With an animated conflux of questions and answers following each research report, the symposium enjoyed the same lofty level of success as those held in previous years.

At the alumni association meeting held after the symposium, some members who had revisited Japan under the BRIDGE Fellowship Program\* told about their research activities with Japanese colleagues.

In continuation from the previous year, donations are being solicited by the association for recovery in the wake of the Great



Forum participants at Chapman University

East Japan Earthquake. Students studying Japanese language at the university also volunteered to participate in this effort.

\*For details on the *BRIDGE Program*, please visit our website: <http://www.jsps.go.jp/english/e-plaza/bridge/index.html>

JSPS Washington Office

## Washington Office Holds Symposium on Climate Change

On 22 February, the JSPS Washington Office cosponsored a symposium on the theme “Climate Change” with the American Association for the Advancement of Science (AAAS), National Academy of Sciences (NAS), National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric



Panel discussion on water

Administration (NOAA), and National Science Foundation (NSF). The event was held at the Cosmos Club in Washington, DC.

At its opening, the symposium was kicked off with remarks by JSPS Washington Office director Dr. Osamu Shimomura, who was followed by NAS president Dr. Ralph J. Cicerone and representatives of the cosponsoring NOAA and NASA and of the Embassy of Japan in the United States of America. Then, Dr. Akimasa Sumi, now president of the National Institute for Environmental Studies (NIES), who chaired the symposium, gave a presentation that overarched the entire content of the meeting. Ensuingly, sessions were held on three topics: Atmosphere, Water, and Land. Lectures were given on these topics by experts from the US and Japan, panel discussions were held, and a vigorous exchange of views that included the floor was enjoyed by all. Altogether, more than 140 people attended the symposium and its following reception.

JSPS Washington Office

## Orientation Held for New NIH-Hosted JSPS Fellows



Dr. Ozato greeting participants

On 7 March, JSPS co-held an orientation with the National Institutes of Health (NIH) for Japanese researchers newly dispatched to NIH under JSPS's Postdoctoral Fellowships for Research Abroad. The event was venues at Stone House on the NIH premises.

The orientation began with remarks by Dr. Keiko Ozato, who chairs

the selection committee for NIH-Hosted JSPS Fellows, and Mr. Yasushi Mitsukuri, a coordinator in JSPS's Administration Department. They were followed by a briefing from an official of JSPS's Research Fellowship Division on the fellowship program's administrative procedures. Then, each of the newly selected fellows gave a 5-minute presentation on the nature of the research they will be conducting at NIH.

At the reception following the orientation, remarks were offered by Fogarty International Center director Dr. Roger I. Glass, Dr. Ozato, and Mr. Mitsukuri, while the curtain opened fully on the event with a toast proposed by Dr. Michael Gottesman, the deputy director of NIH for intramural research. The get-together gave the new fellows, ongoing fellows, their host researchers, selection committee members, and Japanese researchers residing at NIH an excellent opportunity to mingle and strengthen their exchanges with one another.

JSPS Washington Office

## Symposium Held with University of California, Berkeley

On 7-8 February, JSPS San Francisco held a jointly sponsored symposium with the University of California, Berkeley on the theme "The Media Histories/Media Theories & East Asia." Its aim was to foster both local and transnational scholarly perspectives on East Asian art and media theory within a context of recent cross-disciplinary arguments in film and media studies. The symposium brought together five media theorists invited from Japan along with nearly 40 international scholars.

During this 2-day event, the invited Japanese scholars gave presentations on such topics as "Visuality and the City" and "Media and the Body." Each day, roundtable discussions were held in which participants from Japan, Europe, and the US exchanged views and thoughts in a lively manner. Emphasizing the importance of encounters between different cultures, their dialogue worked to deepen both knowledge and understanding of Japanese and East Asian cross-cultural developments in media theory and culture from the early 20<sup>th</sup> century to present.

In addition, the symposium featured panel sessions with international scholars, over the course of which cutting-edge research achievements



Media-related presentation

were introduced across a broad spectrum of the media research domain. These sessions also provided a valuable opportunity for young scholars in the humanities to expand their international experience while communicating the challenges and attainments of their own research efforts.

JSPS San Francisco Office

## Sixteenth Meeting of Japan-India Science Council Held

Jointly sponsored by JSPS and the India's Department of Science & Technology (DST), the 16<sup>th</sup> meeting of Japan-India Science Council was held in Tokyo on 17 March. Co-chaired by Prof. Atsuto Suzuki, Director General, High Energy Accelerator Research Organization (KEK), and Dr. Thirumalachari Ramasami, Secretary to the Government of India, Department of Science and Technology, the Council comprised 14 members. As this was the first Council meeting to be held since the



Council members with JSPS president Dr. Anzai (front, second from right)

addition of the "mathematics and computational science" field, it greeted the two new members who will coordinate the new field.

In the meeting, the activities carried out under the Japan-India Cooperative Science Program in FY 2012 were reviewed, and the new joint research projects and seminars to be implemented in FY 2013 were selected. The plan for holding the next Asian Academic Seminar was also discussed. The members accepted Prof. Suzuki's proposal to organically link the various programs carried out under the Council's auspices in ways that will effectively sustain and advance scientific exchange between the two countries. As a first try, this time the results of joint research projects that ended in FY 2012 were presented. Having received a high evaluation in the application screening process, the projects were nominated for the presentation by the Japanese members of the Council. The principle investigators on the Japanese side delivered presentations, segueing the Council meeting to a successful close.

The seventeenth Council meeting is scheduled to be held in India next March.

Asian Program Division

## Alumni General Assembly and RONPAKU Medal Award Ceremony Held in Thailand

On 8 February, the JSPS Alumni Association of Thailand (JAAT) held its annual General Assembly in tandem with a RONPAKU\* Medal Award Ceremony convened by JSPS and the National Research Council of Thailand (NRCT). The chairman of the JSPS Fellow Alumni Association in China, Dr. Xiang Yu (professor, College of Management, Huazhong University of Science and Technology) was invited to Bangkok to attend these events in a move to promote international exchange among JSPS alumni associations.

At the General Assembly, Dr. Yu introduced his alumni association's activities in China. Then, JAAT president Dr. Busaba Yongsmith reported on JAAT's activities over the past year and invited an exchange of views among the members.

In the following JSPS-NRCT RONPAKU Medal Award Ceremony, initial remarks were offered by Embassy of Japan first secretary

Mr. Tetsuo Hasegawa and NRCT deputy secretary-general Mrs. Kanchana Pankhoyngam, after which kudos were given to three Thai researchers in the presence of NRCT, JSPS and JAAT members for having won new RONPAKU (Dissertation PhD) Fellowships. Then, JSPS International Program Department director Mr. Hisashi Kato presented medals to the attending two RONPAKU graduates, who in turn gave talks on the content of their doctoral theses.

During meeting, Dr. Yu delivered a special lecture on the theme "International Cooperation and Its Importance for the Academic Careers of Young Scholars," in which he touched upon his own experiences doing research in Japan and Germany in elaborating the importance of promoting collegueship and international exchange among young researchers.

JSPS Bangkok Office



Two RONPAKU graduates with ceremony attendants



RONPAKU graduates giving speeches



Dr. Xiang Yu giving lecture

\*JSPS RONPAKU Program supports Asian and African researchers in obtaining a PhD degree from a Japanese host university while staying in their home countries. For details, please visit our website: <http://www.jps.go.jp/english/e-ronpaku/index.html>

## International Workshop on Man-Nature Coexistence Held in Nairobi

On 8-9 February, the JSPS Nairobi Research Station teamed up with the Research Institute for Languages and Cultures of Asia and Africa (Tokyo University of Foreign Studies) to hold an international workshop on the theme "Mobility, Hybridity and the Way to Coexistence: Restructuring Daily Life in Rural and Urban African Societies." The event had two objectives: One was to advance a discussion on methodologies and recent themes of regional research using an approach that crosscuts various fields in the humanities, social sciences and other disciplines. The second was to promote academic collaboration among young and mid-career researchers from Japan and East Africa.

Sessions were held on the following four themes: "Restructuring Urban Spaces and Places," "Development Program: Nation-State and the People," "Viewpoints from Daily Life of the People: Farmers on the Move," and "Viewpoints from Daily Life of the People: Pastoralists in Trouble?" In each, oral presentations were given by researchers from both Japan and East African countries, spurring a vigorous exchange of views. A discussion was also held on ways to



Researcher showing a slide on agrarian refugees

effectively use JSPS's programs in supporting joint investigations between Japanese and African scholars.

JSPS Nairobi Research Station



The following fellows participated in JSPS's Science Dialogue Program during the period from January through March 2013. For details about the program, please see its website: <http://www.jsps.go.jp/english/e-plaza/e-sdialogue/>.

Overseas Fellowship Division



## Aomori Prefectural Sanbongi High School

Date: 5 February

**Dr. Cristina SANCHEZ GOMEZ** (Spain)  
Host institution: Tohoku University  
Title: "What Can Rhizobia Do for Us?"



## Iwate Prefectural Mizusawa High School

Date: 28 January

**Dr. Michael L. BAKER** (UK)  
Host institution: Tohoku University  
Title: "Working in Physics"

## Ibaraki Prefectural Takezono High School

Date: 26 February

**Dr. Felix E. BUCHERT** (Germany)  
Host institution: Tokyo Institute of Technology  
Title: "The Air We Breathe: Consequences of Oxygenic Photosynthesis"

## Saitama Prefectural Kumagaya High School

Date: 18 February

**Dr. Salirian R. CLAFF** (Australia)  
Host institution: Japan International Research Center for Agricultural Sciences  
Title: "What's Down Under?"

**Dr. Anton MYALITSIN** (Germany)

Host institution: RIKEN  
Title: "Nanoscience—Small Is Beautiful"

## Dr. Lech W. PIOTROWSKI

(Poland)  
Host institution: RIKEN  
Title: "The Cosmic Rays of Highest Energies"



## Junior High and Senior High School at Komaba, University of Tsukuba (Tokyo)

Date: 19 January

**Dr. Alexander J. O'CONNOR** (US)  
Host institution: Hitotsubashi University  
Title: "An Introduction into Social, Personality, Cultural, and Health Psychology"



## Tokyo Metropolitan High School of Science and Technology (Tokyo)

Date: 16 February

**Dr. Mirabbos HOJAMBERDIEV** (Uzbekistan)  
Host institution: Tokyo Institute of Technology  
Title: "What Magic Can Nanophotocatalyst Do?"

## Niigata Municipal Bandai Senior High School (Niigata)

Date: 15 February

**Dr. Tonni A. KURNIAWAN** (Indonesia)  
Host institution: National Graduate Institute for Policy Studies  
Title: "Landfill Leachate Treatment"

## Niigata Prefectural Takada High School

Date: 5 March

**Dr. Antoine M. COLLIN** (France)  
Host institution: Tokyo Institute of Technology  
Title: "Linking Human Societies to Coastal Life Using the Spatial Ecology"

## Toyama Prefectural Toyama High School

Date: 17 January

**Dr. Rinus G. VERDONSCHOT** (Netherlands)  
Host institution: Nagoya University  
Title: "The Science of Speaking"

Date: 24 January

**Dr. Jay Arre O. TOQUE** (Philippines)  
Host institution: Kyoto University  
Title: "Digitization and Analytical Imaging of World Cultural Heritage Using State-of-the-art High-Resolution Scanning Technologies"

## Fukui Prefectural Fujishima Senior High School

Date: 20 February

**Dr. Chantal WEBER** (Germany)  
Host institution: Kansai University  
Title: "The Japanese Culture from the View Point of a German Researcher"



### Fukui Prefectural Wakasa Senior High School

Date: 23 January

**Dr. Sek-Bik Jennifer KAN** (UK)  
Host institution: Kyoto University  
Title: "On a Journey towards  
Becoming a Synthetic Organic  
Chemist"



Date: 5 February

**Dr. Nicholas GOWER** (UK)  
Host institution: Kyoto University  
Title: "Catalysts in Synthetic Chemistry"

**Dr. Takesi MATSUYAMA HOYOS** (Colombia)  
Host institution: Kyoto University  
Title: "Molecular Mechanism of Visual and Non-visual Functions"

### Yamanashi Prefectural Hikawa High School

Date: 24 January

**Dr. Juergen SAILER** (Germany)  
Host institution: The University of Tokyo  
Title: "Quantum Information Processing"

### Yamanashi Prefectural Tsuru High School

Date: 25 January

**Dr. Lasse F. LAURSEN**  
(Denmark)  
Host institution: The University of  
Tokyo  
Title: "Multi-touch Music Mixing"



**Dr. Davin H. E. SETIAMARGA**  
(Indonesia)  
Host institution: The University of  
Tokyo  
Title: "My Personal Quest to  
Understand the Grand Story of  
Life through Non-applied, Basic  
Science Research"



Date: 4 February

**Dr. Chloe BOIS** (France)  
Host institution: The University of  
Tokyo  
Title: "Printing?"



**Dr. Tobias MEILINGER**  
(Germany)  
Host institution: The University of  
Tokyo  
Title: "Spatial Cognition"



### Nagano Prefecture Suwa Seiryō High School

Date: 11 January

**Dr. Arnout R. D. VOET** (BELGIUM)  
Host institution: RIKEN  
Title: "How to Design a Drug"

### Shizuoka Kita High School (Shizuoka)

Date: 31 January

**Dr. Timothy D. KOWALCZYK**  
(US)  
Host institution: Nagoya  
University  
Title: "How Can We Make a Better  
Solar Cell?"



Date: 4 February

**Dr. Thanyaluck PHITAK** (Thailand)  
Host institution: Nagoya University  
Title: "Carbohydrate Research"

### Shizuoka Prefectural Hamamatsu Kita High School

Date: 15 February

**Dr. Kyalo S. KANYIVA** (Kenya)  
Host institution: The University of Tokyo  
Title: "Introduction to Chemical Complexes"

### Shizuoka Prefectural Iwata Minami High School

Date: 30 January

**Dr. Michelle H. S. LAM** (Australia)  
Host institution: Nagoya City University  
Title: "An Introduction to Australia and the Aging Male Reproductive  
System"

### Shizuoka Prefectural Kakegawa Nishi High School

Date: 18 March

**Dr. Shin Il KIM** (Korea)  
Host institution: Kyoto University  
Title: "ES/iPS Cell and Regenerative Medicine"

### Aichi Prefectural Kasugai High School

Date: 4 March

**Dr. Briony L. MAMO** (Australia)  
Host institution: Japan Agency for Marine-Earth Science and  
Technology  
Title: "Foraminifera: Small Size, Big Tool"

### Takada Senior High School (Mie)

Date: 12 March

**Dr. Philip G. YOUNG** (Australia)  
Host institution: Osaka University  
Title: "An Introduction to Australia and to a Research Career in  
Chemistry"

### Osaka Prefectural Hirakata High School

Date: 16 January

**Dr. Marco M. CANDEIAS** (Portugal)  
Host institution: Kyoto University  
Title: "The Adventures of Scientist Marco"

### Wakayama Prefectural Koyo High School

Date: 4 February

**Dr. Sergej POLISSKI** (Germany)  
Host institution: Kyoto University  
Title: "Lithium Ion Batteries—a 'Bright' Future?!"

### Konko Gakuen Junior and Senior High School (Okayama)

Date: 16 January

**Dr. Erik O. DARPO** (Sweden)

Host institution: Nagoya University

Title: "How Can You Do Research in Mathematics?"

Date: 18 February

**Dr. Simon J. WOOD** (Switzerland)

Host institution: The University of Tokyo

Title: "The Mathematics of Symmetry"

### Hiroshima University High School (Hiroshima)

Date: 18 February

**Dr. Olakunle ADEEGBE**

(Nigeria)

Host institution: Osaka University

Title: "T Regulatory Cells (T Regs):

The Good and the Bad Sides"



### Tokushima Prefectural Jonan High School

Date: 14 February

**Dr. Ana E. COPE** (Philippines)

Host institution: Okayama University

Title: "Philippines to Japan: The World of Microbes and Their Interactions"

### Saga Prefectural Chienkan Senior High School

Date: 16 March

**Dr. Fabio DALLA LIBERA** (Italy)

Host institution: Osaka University

Title: "Biologically Inspired Robot Control"

**Dr. Sudhina GURAGAIN** (Nepal)

Host institution: Kumamoto University

Title: "Stimuli Responsive Colloidal Systems"

**Dr. Vongsavanh PHONGSISAY** (Laos)

Host institution: Kyushu University

Title: "International Scientist and Medical Research in Infection and Autoimmune Disease"

**Dr. Chinyen WANG** (Taiwan)

Host institution: Kobe University

Title: "International Civil & Commercial Dispute Resolution"

**Dr. Chantal WEBER** (Germany)

Host institution: Kansai University

Title: "The Japanese Culture in Science"

### Kumamoto Prefectural Daini High School

Date: 17 January

**Dr. Kasem KULKEAW** (Thailand)

Host institution: Kyushu University

Title: "Life Organisms as Tools for Biomedical Research"

### Ikeda High School (Kagoshima)

Date: 28 January

**Dr. Lixiang WANG** (China)

Host institution: Kyushu University

Title: "Mitochondrial Dynamics: From Mechanism to Disease"



## Welcome to JARC-Net

"I want to find someone who is doing the same kind of research as mine."

"I'm looking for counterpart researchers who want to apply for a bilateral joint project with me."

JSPS offers you a database that provides you information of researchers worldwide. Its online registration form includes a field for keywords to facilitate your search.



JSPS operates the Japan-Affiliated Research Community Network (JARC-Net) database. Its purpose is to support the maintenance and expansion of working networks forged between Japan and other countries over long years of implementing JSPS's various international exchange and fellowship programs.

Registered members of the database are able to access other members' profiles, including their names, affiliations, positions, research fields, and education/work histories. They can then use this information to look for new research partners or to broaden support for their activities by mobilizing past colleagues, such as university or JSPS program alumni. Members are also provided an information mail service on JSPS's international exchange and cooperation programs.

Registration in the JARC-Net is open to all who are interested in research exchange between Japan and other countries, including but not limited to overseas students and researchers who have experienced stays in Japan, Japanese researchers interested in research exchanges with colleagues in other countries, international exchange program administrators in universities and research institutions, and corporate R&D personnel.

We look forward to you registering on and taking active advantage of our JARC-Net service. Please visit our website: <http://www.jsp.go.jp/english/e-affiliated/>.

JSPS Fellows Plaza



### Cover photo:

*Kakigori*, shaved ice colored with various tasty syrups—red strawberry, yellow lemon, green tea, creamy white milk. . . A summer refreshment served in ubiquitous shops displaying a kakigori flag with the character 氷 (ice) written in red upon a blue and white background.

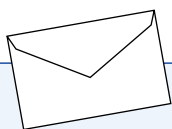
## About JSPS

The Japan Society for the Promotion of Science (JSPS) operates as an independent administrative institution to perform the following main functions: fund scientific research, foster researchers, promote international scientific exchange, and advance university reform.



### Crowing Rooster, Emblem of the Japan Society for the Promotion of Science

From days of old in Japan, it has been the belief that the vigorous cry of the rooster in the gray of the morning augurs the coming of a new and bright day. As the crowing rooster can therefore be thought of as a harbinger of the kind of new knowledge that promises a brilliant future for humankind, it was chosen as the emblem of the Japan Society for the Promotion of Science. This emblem was designed in 1938 by Professor Sanzo Wada of Tokyo Fine Arts School to depict the rooster that symbolizes the breaking dawn in a verse composed by Emperor Showa.



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Please let us have your comments and impressions about the newsletter.

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For further information on JSPS's organization and programs, please visit our website [[www.jpsps.go.jp/english/](http://www.jpsps.go.jp/english/)], or mail or fax inquiries to JSPS Fellows Plaza using the address or fax number given below. JSPS Quarterly and our brochure may also be downloaded.

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