





FEATURE: New Programs Launched under Supplemental Budget





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Supplemental Budget: Its Background and Application

In May, the Japanese government established its supplemental budget, which was initiated against a backdrop of the current global recession. In addition to support for emergency employment and financial recovery strategies, it provides funding for strengthening Japan's human resources and advancing its technological development. For that purpose, a budget of ± 300 billion was initially allocated to JSPS. Due to belt-tightening measures taken by the newly elected administration, the amount has been adjusted to ± 157.56 billion, which is being used to implement two concrete new programs designed to spur Japan's future growth. They are titled "Funding Program for World-Leading Innovative R&D on Science and Technology (FIRST Program)" and "International Research Experience for Students and Young Researchers."

The FIRST Program creates a research funding system that gives maximum expression to researchers' capabilities, while placing top priority on researchers' initiatives in utilizing funds that will produce results linked to Japan's advancement. The program International Research Experience for Students and Young Researchers supports the sending of young researchers, including undergraduate/graduate students, to overseas research institutes and research-target areas, with an aim to fostering talented researchers with rich international experience and perspectives who can shoulder Japan's future.

JSPS participates in the operation of these programs in coordination with the Council for Science and Technology Policy (only for the FIRST Program) and the Ministry of Education, Culture, Sports, Science and Technology. Using the ± 157.56 billion budget, special program funds are to be established within JSPS. Of this ± 157.56 billion budget, ± 100 billion is to be allocated to the FIRST Program and ± 7.56 billion to the program "International Research Experience for Students and Young Researchers." Consideration is being given to using ± 50 billion for a new program to support young and female researchers.

Funding Program for World-Leading Innovative R&D on Science and Technology (FIRST Program)

Under this "FIRST Program," support is given to world-leading projects winnowed from among cutting-edge projects carried out in various fields and at various stages across a spectrum of tiers from basic research aimed at generating new knowledge to R&D on topics of near-future application. Some 565 applicants responded to a call for proposals, among which 30 were selected on 4 September 2009.

The goal in advancing these research initiatives is to produce top world-level R&D results, which will accrue to strengthening Japan's international competitiveness while cultivating the nation's latent strengths and capabilities. Concomitantly, the fruits of these R&D achievements will be applied to the benefit of society and its people.

Program Characteristics and JSPS's Role

In establishing this program, there was a strong awareness of the need to address problems embodied in Japan's current research funding system, particularly the difficulty experienced by researchers in freely using research funds over a multi-year period due to the prevailing single-year budgetary system.

JSPS's role in this program is to maintain and operate the fund for financing research projects and to administer the program's implementation. Very high expectation is placed on JSPS, as Japan's core research funding agency, to effectively operate this uniquely crafted, heretofore unprecedented program.

Approximately ± 100 billion will be allocated to support the right-listed 30 projects.

Selected Projects (Core Researchers & Research Subjects)

Applicant's Name	Applicant's Position	Research Subject
Kazuyuki Aihara	Professor, Institute of Industrial Science, The University of Tokyo	Mathematical Theory for Modelling Complex Systems and its Transdisciplinary Applications in Science and Technology
Shizuo Akira	Director, WPI Immunology Frontier Research Center, Osaka University	Comprehensive Understanding of Immune Dynamism: Toward Manipulation of Immune Responses
Chihaya Adachi	Professor, Center for Future Chemistry, Kyushu University	Challenges for Super Organic Electroluminescence Devices through Innovation of Organic Semiconducting Materials
Yasuhiko Arakawa	Professor, Institute of Industrial Science, The University of Tokyo	Technology Development for Photonic-Electronic Integration System
Masayoshi Esashi	Professor, The World Premier International Research Center Advanced Institute for Materials Research (WPI-AIMR), Tohoku University	Research and Development of Integrated Microsystems
Hideo Ohno	Professor, Research Institute of Electrical Communication, Tohoku University	Research and Development of Ultra-low Power Spintronics-based Logic VLSIs
Teruo Okano	Director and Professor of Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University	System Integration for Industrialization of Regenerative Medicine: Creation of Organ Factory
Hideyuki Okano	Professor, Department of Physiology, Keio University School of Medicine	Strategic Exploitation of Neuro-Genetics for Emergence of the Mind
Kazunori Kataoka	Professor, Department of Materials Engineering, Graduate School of Engineering, The University of Tokyo; Division of Clinical Biotechnology, Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo	Development of Innovative Diagnostic and Therapeutic Systems Based on Nanobiotechnology
Tomoji Kawai	Professor, Osaka University	Research and Development of Innovative Nanobiodevices Based on Single-Molecule Analysis—Ultra-fast Single-Molecule-DNA Sequencing, Ultra-Low-Concentration Virus Detection, and Ultra-Sensitive Biomolecule Monitoring
Masaru Kitsuregawa	Professor, Institute of Industrial Science, The University of Tokyo; Director, Center for Information Fusion	Development of the Fastest Database Engine for the Era of Very Large Database and Experiment and Evaluation of Strategic Social Services Enabled by the Database Engine
Tsunenobu Kimoto	Professor, Kyoto University, Department of Electronic Science and Engineering	Innovative SiC Power Electronics Technology toward Low-Carbon Society
Masaru Kurihara	Advisor, Water Treatment & Environment Division, Toray Industries, Inc.	Mega-ton Water System
Yasuhiro Koike	Professor, Faculty of Science and Technology, Keio University	Creation of Face-to-Face Communication Industry by Ultra High-Speed Plastic Optical Fiber and Photonics Polymers for High-Resolution and Large-Size Display
Tatsuhiko Kodama	Professor, Department of Systems Biology and Medicine, Research Center for Advanced Science and Technology, The University of Tokyo	Molecular Dynamics Initiative for Antibody Drug Development (MDADD)
Yoshiyuki Sankai	Professor, Graduate School of Systems and Information Engineering, University of Tsukuba	World Leading Human-assistive Technology Supporting a Long-lived and Healthy Society
Hiroki Shirato	Professor, Department of Radiology, Hokkaido University Graduate School of Medicine	Sustainable Development of Molecular-Tracking Radiotherapy System
Hiroshi Segawa	Professor, Research Center for Advanced Science and Technology, The University of Tokyo	Development of Organic Photovoltaics toward a Low-Carbon Society: Pioneering Next Generation Solar Cell Technologies and Industries via Multi-manufacturer Cooperation
Koichi Tanaka	General Manager, Koichi Tanaka Mass Spectrometry Research Laboratory, Shimadzu Corporation	Contribution toward Drug Discovery and Diagnosis by Next Generation of Advanced Mass Spectrometry System
Yoshinori Tokura	Professor, Department of Applied Physics, The University of Tokyo	Quantum Science of Strongly Correlated Systems
Akira Tonomura	Fellow, Hitachi, Ltd.	Development and Application of Atomic-Resolution Holography Electron Microscope
Ryozo Nagai	Professor, Department of Cardiovascular Medicine, Graduate School of Medicine, The University of Tokyo	Development of Optimized Therapeutic Strategies against Cancer and Cardiovascular Disease Using Large-scale Computing and Clinical Information
Shinichi Nakasuka	Professor, Department of Applied Physics, The University of Tokyo	Establishment of New Paradigm of Space Development and Utilization with Nano-Satellites Introducing Japanese-Original "Reasonably Reliable Systems Engineering"
Hideo Hosono	Professor, Frontier Research Center, Tokyo Institute of Technology	Exploration of New Superconductors and Related Functional Materials and Application of Superconducting Wires for Industry
Noritaka Mizuno	Professor, Department of Applied Chemistry, School of Engineering, The University of Tokyo	Innovative Basic Research toward Creation of High-performance Battery
Hitoshi Murayama	Director of the Institute for the Physics and Mathematics of the Universe, The University of Tokyo	Uncovering the Origin and Future of the Universe—Ultra-wide-field Imaging and Spectroscopy Reveal the Nature of Dark Matter and Dark Energy
Masashi Yanagisawa	Professor, The University of Texas Southwestern Medical Center	Molecular Mechanism and Control of Complex Behaviors
Shinya Yamanaka	Director, Center for iPS Cell Research and Application, Institute for Integrated Cell-Material Sciences, Kyoto University	iPS Cell Project for Regenerative Medicine
Yoshihisa Yamamoto	Professor, National Institute of Informatics	Quantum Information Processing Project
Naoki Yokoyama	Fellow, Fujitsu Laboratories Ltd.	Development of Core Technologies for Green Nanoelectronics

Source: Cabinet Office, Government of Japan Only core researcher's name provided as applicant

International Research Experience for Students and Young Researchers

This is a highly mobile, intensive program designed to send promising young researchers, including undergraduate/graduate students, to overseas universities and research institutes to study and gain research experience. At the same time, the program is meant to strengthen the collaborative relationships between Japanese universities and research institutes and their overseas counterparts, while in the process fostering a generation of researchers who will be the wellspring for greater Japanese competitiveness in years and decades ahead.

From the supplemental funding allocated to JSPS, ¥7.56 billion will be placed into this program's "Researcher Overseas Visit Fund." The fund will be used to send Japanese students and young researchers recruited in FY 2009 abroad to study or do research at universities and research institutes in other countries.

The program is implemented in two components: "Excellent Young Researcher Overseas Visit Program" and "Institutional Program for Young Researcher Overseas Visits." Under the first, support is provided individually to young researchers. Under the second, grants are made to Japanese universities and other research institutes that have in place systematic programs for sending young researchers abroad. Through these programs, a large number of young people who aspire to become full-fledged researchers will be given the opportunity to go overseas and broaden their international perspectives in such a way as to enable them to play active roles within global society.



Excellent Young Researcher Overseas Visit Program

Through this program, young Japanese researchers are sent to research institutes in other countries, where they are given the opportunity to experience research with overseas researchers. This program has two components with different eligibility and support parameters.

Details of the two program components are as follows:

- A. Eligible participants: As a rule, full-time researchers of up to 42 years of age (associate and assistant professors, lecturers, research associates and others in comparable positions)
- Period of support: From 90 days to (as a rule) 12 months (Extension beyond 12 months may be approved to carry out research activities.)
- B. Eligible participants: Recipients of JSPS Research Fellowships for Young Scientists
 - Period of support: From 90 days to (as a rule) 12 months (Extension possible of up to 18 months.)

(URL: http://www.jsps.go.jp/j-wakatekojin/)

Institutional Program for Young Researcher Overseas Visits

This program supports projects implemented by Japanese universities and other research institutes to systematically dispatch students and young researchers overseas. Under them, undergraduate/graduate students aspiring to become future researchers and other young researchers are given opportunities to participate in research activities overseas.

Details are as follows:

- Eligible institutes: Universities with graduate schools, inter-university research institutes, national and local governmental research institutes, independent administra-

tive research institutions that conduct scientific research or R&D activities

- Eligible participants: undergraduate and graduate students, researchers of up to 42 years of age (postdocs, research associates, assistant professors, lecturers and other researchers of comparable positions)
- Period of dispatch: About three months (up to one year)
- Period of support for each project: two or three years

(URL: http://www.jsps.go.jp/english/e-daikokai/)

Lecture Meeting Held for Recipients of Japanese Merit Award

Dr. Arden L. Bement, Jr., director, National Science Foundation (NSF), and Prof. Ernst-Ludwig Winnacker, secretary general of the International Human Frontier Science Program Organization (HFSPO), former president of the German Research Foundation (DFG), both of whom have a very close relationship with JSPS, were presented the Spring 2009 Order of the Rising Sun, Gold and Silver Star, a decoration of merit conferred by the Japanese government.

Specifically, the Order is awarded for especially meritorious achievements made in either the national or public domain. This time, eight people from other countries were awarded the Order. Among them, Dr. Bement and Prof. Winnacker were honored for their highly appraised contributions to scientific exchange between Japan and the US and Germany respectively.

On 8 May, a ceremony for presenting the Order was held in the hall *Matsukaze-no-Ma* of the Imperial Palace. That evening, JSPS held a scientific lecture meeting titled "Academic Exchange between the US/Germany and Japan," to commemorate the two conferrals. At it, Dr. Bement and Prof. Winnacker lectured on the themes "Faster, Stronger, Higher: Expanding the Benefits of



Dr. Arden L. Bement, Jr.

Prof. Ernst-Ludwig Winnacker



US-Japan Science Cooperation" and "Challenges of Research Management—Japan versus Germany." Their rich experience in promoting scientific collaboration with Japan imbued the lectures with a rare depth of insight and appeal.

Taking advantage of this special opportunity to hear lectures from the two distinguished international science authorities, some

> 60 people, including officials from many embassies, scientific institutions and the Ministry of Education, Culture, Sports, Science and Technology, attended the meeting, filling the hall to near capacity. The spirited Q&A discussion following the lectures testified to the participants' high degree of interest in international scientific cooperation.

> After the lecture meeting, a reception party was held amidst a convivial atmosphere, allowing the guests to encircle Dr. Bement and Prof. Winnacker and enjoy pleasant conversation with them.

> > Overseas Fellowship Division

Memorandum Signed for Scientific Exchange with Egypt

On 23 June, a ceremony was held to sign a memorandum of understanding (MoU) between JSPS and the Ministry of Higher Education and Scientific Research (MHESR), Egypt. Convened in MHESR's office, the ceremony was attended by JSPS Cairo Research Station director Dr. Yuji Oishi, who stood in for the president of JSPS, and by MHESR Minister Dr. Hany Mahfouz Helal; Mr. Kaoru Ishikawa, Japanese Ambassador to Egypt; and Dr. Aly El-Shafei, executive director of MHESR's Science and Technology Development Fund. The already JSPS-signed MoU was presented to Dr. Helal for co-signature.

The MoU, which went into effect immediately upon Dr. Helal's signing, covers all fields of the humanities, social sciences and natural sciences. It provides for joint research projects of up to two years in duration and joint seminars, each in a number of up to two per year. Egyptian researchers who wish to apply for project or seminar funding under this program should contact MHESR's Science and Technology Development Fund.

- Asian Program Division



Fourteenth "Science in Japan" Forum Held in Washington, DC

On 11 June, the JSPS Washington Office held its 14th "Science in Japan" Forum at the Cosmos Club in Washington, DC. Themed "Women in Science," the Forum gathered expert speakers from the US, Scandinavian countries and Japan. The researchers gave historical sketches of the roles women have played in science in their respective countries. Discussing also the present status of women in science, they offered insights into the latest initiatives being taken to advance women's participation in science.

The Forum opened with encouraging words from JSPS president Prof. Motoyuki Ono, who plays a leading role in initiating programs to facilitate the full participation of women in science. In the first session, titled "Social Science Studies of Women Scientists," research findings were presented on the culture of the science workplace as well as on various problems encountered and solutions to them.

In the second session, titled "Faculty Leaders of Gender Equality Projects in the Sciences," the speakers gave illuminating examples of the progress women are and can make in the world of science, sparking anticipation for greater gender-equal participation in the future.

In the last session, titled "Government Strategies for Gender Equality in the Sciences," representatives of the countries attending at the Forum gave examples of their government's efforts to train, secure and sustain female scientists so as to bring their numbers and ranks in closer alignment with male counterparts.



The Forum ended with a discussion panel comprising the session chairs and Washington Office director Dr. Hirotaka Sugawara. Each member provided an overview of the day's discourse, engendering a volley of questions and a spirited floor discussion, making it difficult to bring the day's agenda to an end.

For the lecturers' names and presentation titles, please see the following website: http://www.jspsusa.org/sij.html

- JSPS Washington Office

Cosponsored Symposium Held with University of Birmingham

On 27-28 July, the JSPS London Office cosponsored a large-scale symposium on "Chirality and Supramolecular Chemical Synthesis" with the University of Birmingham. The organizer at the University of Birmingham was Dr. John Fossey, who had previously been a JSPS postdoctoral fellow. Dr. Fossey's host during his two-year research tenure at the University of Tokyo had been Prof. Shu Kobayashi, who was symposium's main speaker. As a member of the UK JSPS Alumni Association's executive committee, Dr. Fossey has a close relationship with JSPS's London Office.

JSPS's International Program Department director Ms. Mami Oyama opened the symposium by expressing the high expectations that JSPS headquarters holds for the leading-edge science being advanced by the Japanese and British researchers in this important field. As a concrete example of the form such efforts are taking, she pointed to this large-scale symposium, organized by former JSPS fellow Dr. Fossey, while emphasizing the need to build international networks particularly among young research-



Ms. Oyama offering opening remarks



Prof. Kobayashi delivering presentation

ers on the doctoral and postdoctoral levels. On the second day, JSPS London Office director Prof. Yuko Furukawa gave a presentation on JSPS's fellowships and its programs for supporting joint research, which struck a chord of high interest with the collaborating Japanese and British researchers.

Among those coming from Japan to address the symposium were Prof. Kobayashi; Prof. Akira Harada, Osaka University; and Prof. Makoto Fujita, the University of Tokyo. The some 100 people assembled listened intently to their presentations on cutting-edge research in the subject field and engaged them in vigorous Q&A discussions. The curtain closed on this very successful two-day event with a parting message from Prof. Nigel P. Weatherill, head of the College of Engineering and Physical Sciences, University of Birmingham, who presided over an award ceremony for the poster session that had been conducted earlier.

BRIDGE Fellowship Launched for JSPS Alumni Members

To date, JSPS alumni associations have been established in 11 countries and regions: Germany, France, the UK, the US, Sweden, India, Egypt, East Africa (Kenya), Korea, Bangladesh, and Finland. Each of these associations works to maintain and strengthen scientific exchange between its host country or region and Japan.

This new fellowship will be carried out as a component of the Japanese government's initiative to strengthen S&T diplomacy. Under it, researchers from other countries who have experienced research in Japan through one of JSPS's programs are given the opportunity to "revisit" Japan. The program targets researchers who are members of the alumni associations listed above. As BRIDGE Fellows, they come to Japan to create, sustain or strengthen collaborative ties and networks with Japanese colleagues. Concrete forms that these visits may take include Fellows revisiting their past host institutions, holding meetings to plan or arrange joint research projects or seminars, training young researchers, giving lectures, or preparing or attending academic or research meetings. The results of each BRIDGE visit are recorded in reports prepared by both the visiting researcher and his/her alumni association. These reports are used to evaluate the visit along with the number of new applications submitted/selected for various categories of JSPS programs, based on the collaborative relations created, sustained or strengthened by way of the Fellow's visit.

Former JSPS Fellows who wish to receive a BRIDGE Fellowship apply to their affiliated alumni association, which in coordination with the country/region's JSPS office makes a nomination to JSPS. Accordingly, inquiries about the application procedure should be directed to an alumni association.

BRIDGE visit tenures are from 14 to 60 days. Under the current recruitment, visits are to be started during the period from 1



December 2009 through 31 March 2010. In this initial fiscal year, about 20 fellowships will be awarded. JSPS's overseas offices will be notified of the number of fellowship quotas allocated to each alumni association.

Selected BRIDGE Fellows will receive a roundtrip air ticket, living allowance and domestic travel allowance from JSPS.

Application guidelines and forms can be downloaded from the following website: **http://www.jsps.go.jp/english/e-plaza**/. JSPS's alumni associations can be accessed on the following website: http://www.jsps.go.jp/english/e-plaza/20_alumni.html

- Overseas Fellowship Division

JARC-Net Put into Operation at JSPS

Toward the end of May, JSPS placed the Japan-Asia Research Community Network (JARC-Net) into operation and initiated user registration. JARC-Net is a researcher information database aimed at supporting the maintenance and expansion of networks cultivated between researchers in Japan and Asian countries through JSPS's research-collaboration and postdoctoral fellow-

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ship programs carried out over long years within the region.

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, from Asian countries. Members are also provided an information mail service on JSPS's exchange and cooperation programs in the Asian community.

Registration is targeted first and foremost to Asian researchers and graduate students who have studied or resided in Japan and to Japanese researchers interested in carrying out collaborations with colleagues in Asian countries. Registration is also open to anyone interested in conducting collaborations between Japan and Asian countries, including international exchange administrators in universities or research institutes and people in the corporate and nonprofit sectors. As the purpose of JARC-Net is to assist in building a broad-reaching network, researchers and other interested persons outside the Asian region may also register.

With from 100 to 200 people a month registering onto the database, we anticipate a broad and expanding membership as knowledge of JARC-Net's establishment circulates. We look forward to your registration and active use of this database service. To register and receive more detailed information, please visit our website: http://www.jsps.go.jp/english/e-astrategy/jarcnet.html

- Asian Program Division

Japanese-German Symposium Held on "Robotics"

On 22-23 May, the JSPS Bonn Office and the German JSPS Club joined ranks in implementing the 14th Japanese-German Symposium, this year on the theme "Robotics." Venued in the city of Karlsruhe in the south of Germany, the symposium, held each



year on a cutting-edge scientific theme, attracted the participation of some 180 alumni club members and other interested people.

As a prelude to the presentations, JSPS inspector general Dr. Hirochika Inoue, himself a leading robotics researcher, described the history of robotics as it has evolved over several decades in Japan, while offering words of appreciation to all those who cooperated in preparing the event.

Four researchers from both Japan and Germany gave presentations that not only addressed robotic technology but also delved into its industrial, human interface, and societal aspects as well. Held in Europe, where a strong religious resistance prevails with regard to humanoid robot development, the symposium provided a good opportunity to promulgate a better understanding of the scientific purposes and significances of robotic research. The success of the event was also manifest in the strong interest shown and good impressions voiced by the participants.

- JSPS Bonn Office

Briefing for Group of Japanese University Representatives at JSPS London Office

On 21 July, the JSPS London Office held a briefing for a group of Japanese university representatives who were on an observation tour to the UK. Supported by the British Council, the tour was held in follow up to the Japan-UK Higher Education Symposium convened in London in February. The members of the group used the UK visit to advance their universities' internationalization strategies by surveying and gathering information of mechanisms for securing exchange students.

At the briefing, the 13 group members introduced efforts being undertaken by their universities to promote internationalization. Following them, JSPS London Office director Prof. Yuko Furukawa described how the Office's activities are working to strengthen Anglo-Japanese scientific collaboration. Then, Dr. Hiroshi Mizuta, professor, University of Southampton, offered a description elaborated with examples of the University's education, research and internationalization activities. Finally, Prof.



Hiroshi Fukuda of Hosei University introduced the activities of the University's European Research Centre. The participants listened intently to these stimulating presentations and asked scores of questions.

- JSPS London Office

Recent Inter-University Symposiums Held in the UK

One important mission of the JSPS London Office is to promote and strengthen scientific exchange between the UK and Japan. In this vein, the Office proactively supports the internationalization initiatives of Japanese universities, which it does by sponsoring and participating in symposiums and seminars among other means. The office also utilizes such meeting to publicize the various JSPS programs available to British researchers.

On 11 May, a joint university-industry seminar was held between the University of Brighton and Tokyo University of Agriculture and Technology as part of a weeklong chain of activities to celebrate the 150th anniversary of the founding of the University of Brighton. It was themed "How universities support industrial innovation; studies from Japan and the U.K." Held at the Embassy of Japan in the UK, the seminar was attended by some 100 people from the two countries.

On 13 May, a seminar was held at the University of Brighton, providing a platform for university faculty and administrators from East Sussex to discuss issues related to university research funding. JSPS London Office director Prof. Yuko Furukawa, Mr. Atsushi Arakawa, director, Paris Office, Japan Science and Technology Agency, and Dr. Hans Hagen of the Royal Society were among the speakers invited to give presentations on Anglo-Japanese scientific exchange, evoking considerable interest among the attendees.

On 19-21 May, a joint symposium was held between the



IR3S-Tyndall Centre Symposium

Tyndall Centre of the University of East Anglia and the Integrated Research System for Sustainability Science (IR3S) of the University of Tokyo on the former's campus. Titled "Pathway toward low carbon society and global sustainability," it featured a keynote address by Dr. Hiroshi Komiyama, former president of the University of Tokyo, and various other presentations on vanguard environmental issues. On 22 July, a joint symposium between Keio University and the British Library was cosponsored by the JSPS London Office on the theme "150 Years of Keio University: Retrospect and Prospect" to celebrate the University's century-and-a-half anniversary.

- JSPS London Office

Sweden-Japan Joint Colloquium Held on "Green Chemistry"

On 25 May, the JSPS Stockholm Office held a colloquium cosponsored with the Royal Institute of Technology (KTH) on the theme "Green Chemistry." Venued at KTH's AlbaNova University Center, the event was attended by some 85 Swedish and Japanese researchers and students.

Research in green chemistry seeks to advance an ecologically sustainable environment, one that mitigates prevailing environmental problems and develops manufacturing processes that minimize health risks.

Both endowed with rich forest resources, Sweden and Japan are moving ahead energetically in biofuel research that utilizes these assets, while developing refining processes for such fuels and resins. The colloquium was held to give the researchers a chance to compare notes while promoting collaboration in this field.

It comprised four sessions in which lecturers whose work crosses and spans a spectrum of biology, botany, chemistry and other specializations. They introduced a research initiative on sustainable biofuels and reported the latest results of their research in such environmentally friendly areas as biodegradable high-performance polymers, recyclable resources, and woody plant biotechnology.

A poster session was also put on by the participating young researchers, sparking a vigorous cross-generational exchange of ideas.



JSPS Stockholm Office

Sweden-Japan Joint Colloquium Held on "Frontiers in Nanobiotechnology"

On 4 June, the JSPS Stockholm Office held a joint colloquium on the theme "Frontiers in Nanobiotechnology from Engineering to Application for Cells." Venued at the AlbaNova University Cen-



ter of the cosponsoring Royal Institute of Technology, the event attracted about 70 researchers and students from Sweden and Japan.

Nanotechnology has become indispensable to miniaturizing instruments used in biological, medical and engineering sciences. Nanotechnological advances in such fields as molecular biology and cell biomechanics have generated the development of the interdisciplinary domain "nanobiotechnology," in which interest flourishes in both Sweden and Japan.

At this colloquium, researchers in a range of related fields, including biology, medicine and engineering, reported on a wide span of cutting-edge research results, including in cell biomechanics, biomaterials, cell and tissue engineering, bio-microactuators, microfluid technology and nanobiotechnology for utilization in single cell analysis, and material science applications to cell biology.

- JSPS Stockholm Office

Académie des Sciences-JSPS Joint Workshop Held in Paris

On 28-29 May, a joint workshop on the theme "Environment and Health Challenges" was held by the JSPS Strasbourg Office and Académie des Sciences. The venue was La Fondation del Duca in Paris. The event enjoyed the large attendance of some 60 French and Japanese researchers along with executives of the cosponsoring organizations, including JSPS executive director Mr.



Naoki Murata and Professors François Gros and Jean-François Bach of Académie des Sciences.

The workshop assembled 16 leading specialists in the areas of medicine, public health and environmental science from France and Japan. They spoke from their various frontline perspectives on the effects of environmental pollution on health, which has over recent years become a severe global issue. The active exchange of views and information enjoyed in the workshop heightened expectation in an ever-stronger Franco-Japanese collaborative framework for advancing environmental research, including vigorous joint research projects.

- JSPS Strasbourg Office

General Meeting Held of Korean JSPS Fellows Alumni Association

On 4 July, the third General Meeting of the Korean JSPS Fellows Alumni Association was held at Silla University, Busan, Korea. Cosponsored by JSPS's Tokyo Headquarters, the Meeting was attended by some 100 people, who included researchers and students from the Busan area in addition to the alumni.

Chairing the General Meeting was Prof. Sung-Hoon Kim, Silla University. The opening ceremony was led off by JSPS inspector general Dr. Hirochika Inoue, who spoke about the importance of scientific collaboration between Korea and Japan and voiced expectation in the role the Korean JSPS Fellows Alumni Association will play in advancing it. He was followed by welcoming remarks from Prof. Hong-Sub Jung, president, Silla University. Next, Mr. Shuitsu Tamitsuji, consul general, Consulate-General of Japan at Busan, spoke about the importance of Korea-Japan scientific exchange in promoting goodwill and friendship between the two countries.

The keynote address was given by Prof. Matsubara Takatoshi, Research Center for Korean Studies, Kyushu University, who spoke in fluent Korean on the topic "Need for Cooperative Framework to Undertake Joint Research Topics Germane to



Korea and Japan."

The meeting continued with an introduction to the programs of JSPS and the National Research Foundation of Korea (NRF). A confabulation was then held on Korea-Japan scientific exchange by Prof. Kunio Takayanagi, chairman, Japan-Korea Joint Committee for Basic Scientific Research, Dr. Atsuhiro Nishida, member of the Joint Committee, and the Korean alumni. The views expressed in it are expected to be reflected in bilateral programs.

- Overseas Fellowship Division

JSPS Alumni Club in Finland—Opening Ceremony and Summer Seminar

On 5 June, a ceremony was held in Turku to officially establish the JSPS Alumni Club in Finland. It was attended by about 35 people, mainly Finnish researchers. Members of the Club's executive had since 2007 been conducting vari-themed seminars aimed at promoting collaboration between Finland and Japan. Over the course of conducting these activities, the Club has registered 48 members, counting both regular and associate members. This first General Meeting of the Club served also as its



inaugural ceremony.

The Meeting was led off by opening remarks from JSPS executive director Mr. Naoki Murata, who thanked the special guests, participants and collaborators, asking for their continued support and cooperation. Next, Mr. Fukuichiro Tanaka, ministercounselor, Embassy of Japan in Finland expressed his strong conviction that the scientific exchange to be promoted by the Club will strengthen and enhance friendly relations between the two countries. He was followed by the Alumni Club chair Dr. Antero Laitinen, who described the purpose and functions of the Club and passed out its bylaws. After that, Mr. Murata presented club badges, prepared by JSPS, to Dr. Laitinen to distribute to the members.

The ceremony was followed by a "Summer Seminar," featuring presentations by Finnish and Japanese researchers on the tandem topics "Functional Foods" and "Future Perspectives of Superconductors and Cosmology." Many interesting ideas and concepts were probed, attracting the keen interest of the attendees. The seminar was followed by a reception, giving the participants an added opportunity to engage in colleagueal conversation.

- JSPS Stockholm Office

Greetings from the JSPS Alumni Club in Finland By Its Chair, Dr. Antero Laitinen

After I received my PhD, I had the opportunity to work at AIST in Tsukuba during 2001-2002 as a research fellow. It was JSPS postdoc funding that made this possible. I had the time of my life. I found the Japanese people to be kind and gentle, always willing to help when I needed it. I stayed in a brand-new dormitory with floor-heating system and other up-to-date equipment. The Japanese work ethic was also impressive. I worked long days in a chemical laboratory developing new synthesis routes for paper chemicals. My Japanese colleague, however, worked much harder, sometimes late into the evening. He would open his sun lounger and sleep in the laboratory. I hope this wasn't because I increased his workload too much. I also fell in love with Japanese food, especially sushi and sashimi. Thanks to my colleagues, I managed to achieve my scientific objectives as well.

In early autumn 2007, the JSPS Stockholm Office contacted some former fellows in Finland about the idea of forming an alumni association. Then, on 16 November, a preparatory meeting for establishing a JSPS alumni club was held in the city of Helsinki. It was chaired by Prof. Hiroshi Sano, director of the JSPS Stockholm Office, and hosted by Prof. Matts Roos of the University of Helsinki. Probably inspired by my life in Japan, I was eager to participate in the establishment of the JSPS Alumni Club in Finland. I saw the Club as being a direct and efficient tool for building a bridge from Finland to Japan over which science, research and culture can find fruitful soil for mutual cooperation.

In 2008, I was selected chair of the JSPS Alumni Club in Finland. The other

board members of the Club for the next three years are Dr. Markku Hauta-Kasari (University of Joensuu), Prof. Paula Kankaanpää (University of Lapland), Prof. Matti Leppäranta (University of Helsinki), Prof. Roos (University of Helsinki), and Dr. Eija Säilynoja (Stick Tech Ltd). Prof. Leppäranta holds the vice-chair of the board.

Even though we are a young Club, our number has already started to grow rapidly, totalling 37 regular members and 11 associate members at the moment. As a JSPS Alumni Club family, we share a common objective of promoting scientific exchange between Finland and Japan in liaison with JSPS. In pursuit of this objective, the Club will provide personal and expert guidance to researchers in Finland concerning JSPS's fellowship programs and will support Japanese researchers working in Finland. Furthermore, the Club will facilitate information exchange among its members, conduct joint activities with academic institutions and science promotion agencies, and disseminate information regarding Japanese science, technology, society and culture.

We have three categories of membership: regular members, associate members, and honorary members. All persons who have or will receive support from JSPS, the Academy of Finland, or Finnish foundations collaborating with JSPS are eligible for regular membership. Individuals and organizations who are interested in pursuing and achieving the Club's objectives are eligible for associate membership. Persons who have a distinguished record of promoting scientific exchange between Finland and Japan are eligible for



honorary membership. Applications for regular membership are made to a designated board member. The board decides whether to grant membership.

The Opening Ceremony and Summer Seminar were successfully held on 5 June at Aurinkoravintola, Turku, Finland. Other 2009 activities of the JSPS Alumni Club in Finland include one annual seminar and one General Assembly. The activities of the Club are distinguished by its high-caliber scientific seminars, including active social networking and evening programs. A General Assembly and seminar, titled "Advanced Models for Materials and Processes," were held on 31 August–2 September at VTT Technical Research Centre of Finland, Espoo, Finland.

As a young and vital Club, we welcome new members who are eager to participate in our activities. Of course, we wish you a wonderful Autumn wherever you may be!

JSPS Alumni Club in Finland

Please see the following JSPS Plaza website to read the bylaws of the Finland Club: http://www.jsps.go.jp/english/e-plaza/alumni/finland/fi_2009.html

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JSPS Summer Program

Attended by 115 young pre- and postdoctoral researchers from the US, UK, France, Germany and Canada, the JSPS Summer Program, cosponsored by the Graduate University for Advanced Studies (Sokendai), was held over a two-month period from 16 June to 26 August.

Featuring a research internship for the participants at a host institution, the program began with a one-week orientation held at the Shonan Village Center in the seaside resort town of Hayama. At it, the fellows received special lectures, gave poster presentations, attended classes in Japanese language learning, engaged in Japanese culture activities, and experienced Japanese living through homestay with a Japanese family. After the orientation, the young researchers went their separate ways to their respective host institutions. Their



summer internships afforded them an experience upon which to consider coming back to Japan to do research at future junctures in their careers. On the day before the program ended, the participants reassembled to present reports on their summer research activities.

For more detailed information on the JSPS Summer Program, please see our website: http://www.jsps.go.jp/english/e-summer/ — Overseas Fellowship Division

The centerpiece of the JSPS Summer Program is the fellows' internship at a host research institution, where they take part in research activities with frontline Japanese researchers in their respective fields. The following are comments offered by two of

Mr. Olivier F. Sanfilippo

(PhD student, Université de Nice Sophia Antipolis) at the University of Tokyo

the fellows on their experiences in the program.

His host: Prof. Katsumi Fukasawa

"Participation in this program was for me a unique experience and opportunity. We enjoyed an exceptional reception by a particularly effective and nice team of host staffs! The first week gave us a chance to experience Japanese culture by introducing us to the language and Japanese way of living. During the orientation, I was happy to meet more than hundred researchers of all horizons. An excellent atmosphere prevailed at the exceptional venue of the Shonan Village Center. The week's finale was an immersive weekend spent in the heart of a Japanese family. In sum, the orientation provided us an entrance into our two-month, feet-on-the-ground living and research experience in Japan.



Mr. Sanfilippo with Prof. Fukasawa and group

For me, it was a delight to work with Prof. Fukasawa and the members of his Western history research team at the University of Tokyo. The way they received and hosted me was so magnificent! Thank you all for everything."

Ms. Morgan T. McCarthy

(Master's student, San Francisco State University) at University of the Ryukyus

Her host: Dr. Akihiro Takemura

"My research, which deals with the evolutionary history of seahorses, seadragons, and pipefish, has led me this summer to one of the most beautiful places in the world—the Ryukyu Islands. Several endemic species of pipefish and seahorses inhabit the coral reefs that surround the islands, and I had the pleasure of exploring the reefs in search of these unique fish. In only three weeks, I collected nine different species of pipefish and one species of seahorse. My hosts—JSPS, University of the Ryukyus, and Dr. Akihiro Takemura—have helped to make my summer in



Ms. McCarthy with Dr. Takemura and group

Japan nothing short of extraordinary. For research opportunities like this, I would go to Japan again, and again, and again."

Washington, DC

Washington Office Holds Orientation for Summer Fellows

On 5-7 April, the JSPS Washington Office assisted the National Science Foundation (NSF) in holding an orientation for its

"2009 East Asia and Pacific Summer Institutes" program. Sixty-five of the attendees were slated to participate in the JSPS Summer Program. For them, Washington Office director Dr. Hirotaka Sugawara and his staff prepared three

specially tailored sessions.

Following an overview of the entire program and a panel discussion, two sessions, led by JSPS representatives, were held on the theme "Living and Doing Research in Japan." Talks were given by Dr. Machi Dilworth, director, NSF Tokyo Regional Office, and Ms. Chihiro Yamanaka from JSPS's Overseas Fellowship Division. They provided basic information on the JSPS Summer Program including financial support, logistics, schedules, and passport/visa requirements. Then, Dr. Sugawara talked about research conditions in Japan and host researcher expectations. He was followed by Ms. Amanda Bakian, an alumna of the 2008 Summer Program, who told the new fellows about her experiences in Japan.

In addition to these informative lectures, Washington Office deputy director



Mr. Kotaro Kodera gave the Japan-bound fellows a lesson in Japanese language fundamentals, including some basic phrases useful in daily living.

In the last session, Mr. Masami Watanabe, science counselor at the Embassy of Japan, introduced Japan's science and technology policies and programs.

Overall, the three-day event proved to be very meaningful in orienting the new fellows to residing and doing research in Japan while dispelling any anxiety they may have had about the experience that lay ahead.

- JSPS Washington Office

Bonn

Summer Program Pre-Departure Orientation Held in Germany

The JSPS Bonn Office holds annual pre-departure orientation meetings for German researchers scheduled to go to Japan to participate in the JSPS Summer Program. The meetings are meant to get the new fellows off on a solid footing while fostering collegiality among them. This year's orientation was held on 5 June in Bonn, with 11 of the 14 outbound fellows attending.

The meeting started off with welcoming remarks by Bonn Office director Prof. Dr. Keiichi Kodaira, followed by a description



of the German-Japanese exchange program by Dr. Ursula Toyka-Fuong of the German Academic Exchange Service (DAAD), which is the German nominating authority for the Summer Program. Then, JSPS representatives offered a briefing on the Summer Program itself. After a break, two past fellows-Mr. Andreas Gierlich and Ms. Miriam Unger-talked about their experiences in the Summer Program and fielded questions. Following them, German JSPS Club executive Prof. Dr. Ingrid Fritsch introduced the alumni association's activities to the new fellows. The event culminated with a dinner party, embracing the Summer Program participants in a warm sendoff

Coincidently, both past fellows who spoke recommended Miyajima, one of Japan's three most scenic sites, as the place to visit for sightseeing while in Japan. They also both recommended gifts to bring from Germany for lab colleagues and host families in Japan, kindling the young researchers' allurement for the intercultural experience ahead of them. During the Q&A session, a wide-ranging discussion was enjoyed, covering such points as the research environment in Japan's host institutions, Japanese culture and customs, various aspects of trip preparation, and conditions at the Graduate University for Advanced Studies (Sokendai), which would provide the venue for the first-week orientation in Japan.

With Prof. Dr. Kodaira, former president of Sokendai, and representatives from JSPS's Tokyo headquarters present for the first time at this year's orientation, detailed answers and extensive information could be provided to the new fellows, imparting them a wealth of knowledge about their upcoming visit to Japan.

- JSPS Bonn Office

London

Pre-Departure Seminar and UK JSPS Alumni Association Evening

On 28 May, the JSPS London Office held a pre-departure seminar for new participants in JSPS's Summer Program, Postdoctoral Fellowship for Foreign Researchers, and Postdoctoral Fellowship (Short-term) for North American and European Researchers. The purpose of the seminar was to provide the Japanbound fellows with information on life and research in Japan that would help their stays in Japan go smoothly while alleviating any concerns they may have had. They were also introduced to Anglo-Japanese research exchange programs in which they would be eligible to participate upon return to the UK.

Opening remarks were offered by

JSPS London Office director Prof. Yuko Furukawa, followed by the Office's deputy director Mr. Takeshi Sekiguchi, who described JSPS London's activities. Then, Ms. Naoko Yamaoka and Ms. Yu Yonehara of JSPS's Overseas Fellowship Division, who had come from Tokyo, introduced JSPS's programs. They were followed by two members of the UK JSPS Alumni Association-Ms. Magdalena Powell and Dr. Andrew Quantock-who described their experiences as JSPS fellows in Japan. Finally, presentations were given on the grant programs for UK-Japan joint research of the Royal Society, Japan Foundation, and Great Britain Sasakawa Foundation by their representatives: Dr.



Hans Hagen, Mr. Neil Cantwell, and Mr. Stephen McEnally.

Following the pre-departure seminar, an Alumni Evening was held. It gave the new and former JSPS fellows a good opportunity to get to know each other and begin tying bonds of colleagueship.

- JSPS London Office



The following fellows participated in JSPS's Science Dialogue Program during the period from May through July 2009. For details about the program, please see its webpage: http://www.jsps.go.jp/english/e-plaza/e-sdialogue/

Overseas Fellowship Division

Akashi National College of Technology (Hyogo)

Date: 2 July **Dr. Daniel D. Moskovich** (Israel) Host institution: Kyoto University Title: "How to Distinguish Different Knots"



Ehime Prefectural Ozu High School

Date: 6 July Dr. Gersende M. A. Maugars (France) Host institution: Ehime University Title: "Fish Reproduction"



Fukui Prefectural Fujishima Senior High School

Date: 16 June Dr. Herman Hidayat (Indonesia) Host institution: Kyoto University Title: "I Love Indonesia and ASEAN Forestry"



Fukui Prefectural Takefu High School

Date: 13 July Dr. Belle Asante (USA) Host institution: Kyoto University Title: "An International Perspective on Cultural Development: My Journey from America to Japan, Africa and Beyond"



Gifu Prefectural Gizan Senior High School



Date: 25 May Dr. Ammar A. Boudaka (Libya) Host institution: National Institutes of Natural Sciences Title: "Cell Sensors in Our Daily Life"



Date: 1 June Dr. Dimitar I. Antonov (Bulgaria) Host institution: Mie University Title: "Nuclear Wastes and Environmental Challenges in Bulgaria"

Ikeda High School (Kagoshima)

Date: 29 June Dr. Jillian M. Healy (Australia) Host institution: The University of Tokyo Title: "From Australia to Japan on the Back of Eel"



Ishikawa Prefectural Nanao High School

Date: 9 July Dr. Christine W. Smyth (Australia) Host institution: Kyoto University Title: "Earthquakes: Why, Warnings, and When?"



Kumamoto Prefectural Daini High School

Date: 26 June Dr. Gang Zhao (China) Host institution: Kyushu University Title: "Cryopreservation of Cells and Tissues: Approaches and Applications"



Miyazaki Prefectural Miyazaki Kita High School

Date: 22 July Dr. Daniel D. Moskovich (Israel) Host institution: Kyoto University Title: "How to Distinguish Different Knots"



Mukogawa Women's University Junior & Senior High School (Hyogo)

Date: 26 June Dr. Galina P. Zamfirova (Bulgaria) Host institution: Kobe University Title: "Plant Genetics and Inheritance"



Saga Prefectural Takeo High School



Date: 28 May Dr. Hong thang Vu (Vietnam) Host institution: Saga University Title: "Why Do People Become a Scientist?—Some Comments of a Vietnamese Researcher; Biorefineries—Factories of Tomorrow"

Seishin Girls' High School (Okayama)

Date: 27 June Dr. Shubash C. Das (Bangladesh) Host institution: Hiroshima Uni versity Title: "Prolonged Sperm Survivability in Hen Oviduct"



Shizuoka Prefectural Iwata Minami High School



Date: 15 July Dr. Son M. Dao (Vietnam) Host institution: Osaka University Title: "Snow White and Magic Mirror Fairy Tale to 'Multimedia Retrieval'"



(Pakistan) Host institution: Tokyo Institute of Technology Title: "Electron Transport in Silicon Nanowires and Nanocrystals"

Yamanashi Prefectural Kofu Minami High School

Date: 16 June Dr. Luc Bonnefond (France) Host institution: The University of Tokyo Title: "How Can We See One Protein?'



Yamanashi Prefectural Yoshida High School

Date: 20 May Dr. Oskar D. Modin (Sweden) Host institution: The University of Tokyo Title: "From Waste to Clean Water and Energy"



Recent Visitors to JSPS (April-July 2009)

Eminent Scientist Prof. Antoine Compagnon

While visiting Japan under the JSPS Award for Eminent Scientists program, Prof. Antoine Compagnon met and exchanged views with JSPS president Prof. Motoyuki Ono on 17 April.

As a professor of Collège de France, one of France's top institutions of higher education, and as a world-renowned literary scholar, Prof. Compagnon has authored numerous books and articles on the history and theory of literature and culture. During

this visit to Japan, Prof. Compagnon gave lectures on these subjects at several universities

During his visit to JSPS, Prof. Compagnon introduced Prof. Ono to his work on the writing of Marcel Proust, and the two exchanged views on various topics including French literary research in Japan and the support systems for humanities research in Japan and France.

Overseas Fellowship Division



AvH Secretary General

On 22 May, Dr. Georg Schütte, secretary general, Alexander von Humboldt Foundation (AvH), made a courtesy visit to JSPS. AvH collaborates with JSPS in carrying out the Japanese-German Frontiers of Science Symposium. In its work with JSPS to foster young researchers, AvH also serves as an overseas nominating authority for JSPS's pre- and postdoctoral fellowship programs for doing research with colleagues in Japan.

Dr. Schütte's discussion with JSPS presi-

BBSRC Chief Executive

On 2 June, Prof. Douglas Kell, chief executive of the Biotechnology and Biological Sciences Research Council of UK (BBSRC). paid a visit to JSPS president Prof. Motoyuki Ono. In response to Prof. Ono's description of JSPS's activities, Prof. Kell explained BBSRC's role as one of the UK's eight research councils and its research institutions' work on targeted fields. He stated the Council's interest in strengthening the

dent Prof. Motoyuki Ono was also attended by Mr. Harald Gehrig, first counsellor, head of Cultural Affairs, German Embassy; Dr. Evelyn Obele, counsellor, Science, Technology and Environment, German Embassy; and Dr. Koichiro Agata, professor, Faculty of Political Science and Economics, Waseda University. They exchanged a wide range of views on advancing Japanese-German collaboration, including young researchers.

- Research Cooperation Division II



bilateral partnerships between the UK and Japan. In a spirited exchange of views, Professors Kell and Ono discussed research and policy trends in the UK and Japan, while reiterating the importance of tackling 21st century global issues such as food supply and of encouraging collaboration among excellent researchers worldwide in resolving them.

- Research Cooperation Division I





Cover photo:

The long water tail and rock skull of Ryuzu-no-Taki (dragonhead falls) in Nikko National Park.

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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E-mail: fellowsplaza@jsps.go.jp Fax: +81-3-3263-1854 For further information on JSPS's organization and programs, please visit our website [www.jsps.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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