



JSPS QUARTERLY

JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE

FEATURE
Message from New JSPS President

No.64 2018 Summer



Message from New JSPS President Dr. Susumu Satomi



I have succeeded Dr. Yuichiro Anzai as president of the Japan Society for the Promotion of Science. In this new capacity, I will strive to promote scientific advancement in Japan.

Scientific research spearheads the cultivation of new frontiers of human knowledge. Systems of knowledge created through research across a variety of scientific fields are valuable assets of human culture. Such

knowledge must be expanded and passed down to future generations. Knowledge generated through scientific research advanced upon researchers' own free ideas is the wellspring of innovation and the driving force behind future national and societal development. JSPS considers supporting this kind of research to be core to its mission.

Curiosity-driven research also provides a platform for fostering talented researchers who will shoulder scientific advancement across a wide range of research fields including those responding to

societal needs and others based on government policy strategy. JSPS provides comprehensive support to researchers who challenge the creation of new knowledge, while advancing initiatives designed to form a creative environment in which excellent young researchers can give ample expression to their abilities and concepts.

It is critical to Japan's future to create good circulation among researchers who actively engage in international research, thereby attracting excellent researchers to Japan from around the world, and to form the kind of robust international research networks that generate superlative knowledge. JSPS is working to advance this kind of global circulation through a variety of programs that operate in cooperation with the funding agencies and researcher communities of countries around the world.

World-leading scientific research derives from the flow of free ideas by individual researchers in ways that hurdle existing partitions and from the undaunted challenge of things thought impossible to realize. JSPS provides comprehensive support for researchers who boldly take on challenges that spur the pioneering of knowledge.

As we work to advance these programs and initiatives, I ask for your greatly appreciated understanding and support.

JSPS Sets in Motion New Midterm Plan

JSPS's 4th Midterm Plan (2018-2022) went into effect on April 1st. While competition in scientific research on a global level is intensifying, opportunities for researchers to collaborate beyond their national borders are increasing. Amidst this milieu, JSPS has established five new midterm

pillars upon which to support researchers who are challenging new knowledge frontiers. This JSPS mission will be pursued through strengthened initiatives to advance scientific research and foster high-caliber researchers.

Five pillars of JSPS's new midterm plan

1. Creating diverse world-level knowledge
2. Fostering the next generations of talented researchers who will challenge the pioneering of new knowledge
3. Enhancing the education and research functions of Japan's universities by leveraging their diverse strengths
4. Building robust international research networks and infrastructures
5. Creating an overarching platform for the comprehensive analysis of science information

JSPS Restructures Its Organization

JSPS is carrying out a stepwise reorganization of its operation toward fully implementing the new midterm plan. In April, a Headquarters for International Affairs was established to realize an international advancement strategy that overarches JSPS's entire program. A Center for Science Information

Analysis has also been established to enhance and analyze the trends and results of the JSPS programs comprehensively while carrying out studies and research toward enhancing and expediting the reform of those programs.



Nobel Prize Dialogue Tokyo 2018



Dr. Tim Hunt (Nobel Laureate in Physiology or Medicine 2001)
©Nobel Media AB/ Photo: Alexander Mahmoud



Dr. Akinwumi A. Adesina, President, African Development Bank
©Nobel Media AB/ Photo: Alexander Mahmoud

On 11 March, JSPS in partnership with Nobel Media AB, an affiliate company of the Nobel Foundation, co-organized Nobel Prize Dialogue Tokyo 2018, held in the PACIFICO Yokohama Conference Center as an event celebrating the 150th anniversary of Sweden-Japan diplomatic relations.

The Nobel Prize Dialogue is aimed at a wide body of the public; it seeks to heighten their interest in and deepen their understanding of science through discussion at the highest level on a science-related theme, which it does by bringing Nobel Laureates, world-leading scientists, and key opinion leaders together with the general public.

In the opening ceremony of this year's Dialogue, welcoming messages were offered by JSPS president Dr. Yuichiro Anzai and Nobel Foundation executive director Dr. Lars Heikensten. Then, special guest remarks were delivered by Mr. Yoshimasa Hayashi, Minister of Education, Culture, Sports, Science and Technology.



Minister Yoshimasa Hayashi

Themed "The Future of Food," the event explored the nature of food and sustainability. It asked and sought to consider the answer to various questions. What challenges are we facing regarding food, which is essential to sustaining life? How can everyone in the world be fed? Faced with a growing population amidst limited food resources, what can science do to improve the situation? How



Nobel Laureate Discussion

should we eat in order to sustain long and healthy lives? On such topics, spirited discussion cascaded across lectures, panel discussion streams, and Q&A sessions, including audience participation. The curtain closed on this powerful event with a razor-sharp exchange on "the flavor of creativity" among a panel of five Nobel Laureates including Prof. Yoshinori Ohsumi, Tokyo Institute of Technology. Joining the 1,100-member audience of various nationalities who enjoyed the Dialogue at the Conference Center was a worldwide audience who watched the event live over the Internet.



Her Imperial Highness
Princess Takamado

After the event, JSPS held a joint reception for the participants in the Nobel Prize Dialogue and 10th HOPE Meeting (see page 4) in the presence of Her Imperial Highness Princess Takamado, who delivered a warm message to the panelists and participants of the two events. She enjoyed talking with the guests including the Nobel Laureates and young scientists from the Asia-Pacific and African regions.

To watch the event on video, please view the following site:

<https://www.youtube.com/nobeldialogue>

For event information, please visit:

http://www.jsps.go.jp/english/e-nobel_prize_dialogue/

International Research Cooperation Division I



10th HOPE Meeting

Launched in 2008, HOPE Meetings are held to bring together excellent graduate students and young researchers specially selected from countries/areas around the Asia-Pacific and African regions. The meetings provide them with an opportunity to engage in interdisciplinary discussions with Nobel Laureates and other distinguished scientists who are pioneering the frontiers of knowledge. They also give the participants a unique chance to build international networks with peers from the regions while lodging together over the entire course of the event.

This 10th HOPE Meeting, chaired by Prof. Makoto Kobayashi, was held in Yokohama during the period from 12 to 15 March, with a focus on physics, chemistry, physiology/medicine, and related fields. It was attended by 108 doctoral students and young researchers from 21 Asia-Pacific and African countries and regions.



Opening Address by Prof. Makoto Kobayashi

Over the course of the event, the participants engaged in a multifaceted program that included lectures and small group discussions given and led by Nobel Laureates and other distinguished scientists. The participants were also provided opportunities to talk about their own research in “one-minute flash talks” and during



Group Discussion with Dr. J. Georg Bednorz

the poster sessions, in which they shared their current research undertakings with each other.

JSPS looks forward to welcoming another group of excellent young scientists to next year's 11th HOPE Meeting.

For more information, please email us at:

hope-meetings@jps.go.jp

Or visit our webpage:

<https://www.jps.go.jp/english/e-hope/outline10.html>

International Research Cooperation Division I

Participants Activities

Team Presentations

The 108 participants were divided into 11 teams comprising multinational members, which delivered interesting presentations on the last day of the meeting. Prizes were awarded for the best presentations.

Research Facility Visit and Cultural Programs

The participants visited the Japan Agency for Marine-Earth



Team Presentation

Science and Technology (JAMSTEC), located in the city of Yokosuka. They were also given an opportunity to enrich their understanding of Japanese tradition and refine their sense of Japanese culture by participating in a tea ceremony and trying their hand at Japanese calligraphy. They took in a musical performance played with traditional Japanese instruments and visiting cultural sites in the historical Kamakura area.



Visiting JAMSTEC

Nobel Laureates at the 10th HOPE Meeting

- Makoto Kobayashi (2008 Physics)
- J. Georg Bednorz (1987 Physics)
- Takaaki Kajita (2015 Physics)
- K. Barry Sharpless (2001 Chemistry)

- Ada Yonath (2009 Chemistry)
- J. Fraser Stoddart (2016 Chemistry)
- Tim Hunt (2001 Physiology or Medicine)



Fourteenth Award of the JSPS Prize

On 7 February, a ceremony was held to award the 14th JSPS Prize, which is given to young researchers who possess excellent records of scientific inquiry and show exceptional promise as trailblazers of Japan's future scientific research.

Selecting the Prize Awardees

Some 423 young researchers in a variety of fields were nominated by Japanese universities, research institutes and academic societies. They were pre-screened by JSPS's Research Center for Science Systems, with final selections made by the JSPS Prize Selection Committee. Convened at the Research Center for Science Systems and chaired by Dr. Ryoji Noyori (2001 Nobel laureate in chemistry), the Committee, comprising 13 world-leading researchers, chose 25 outstanding young researchers for this year's JSPS Prize.

Award Ceremony

Attended by Their Imperial Highnesses Prince and Princess Akishino, the ceremony for awarding the Prize was held at the Japan Academy. Following congratulatory remarks by JSPS president Dr.



Yuichiro Anzai, Dr. Noyori delivered a report on the procedure used to select the 25 awardees, who were then presented 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. Welcoming remarks from Japan Academy president Prof. Hiroshi Shiono were delivered by Dr. Yoichi Higuchi, chairperson of the Academy's Section I, after which Dr. Makoto Nagao, chair of the Academy's Selection Committee, delivered a report on the selection process. The six awardees were then presented a certificate of merit, a medal and a commemorative gift.

Following the presentation of the Medals, Prince Akishino offered remarks and Mr. Toshiei Mizuuchi, State Minister of Education, Culture, Sports, Science and Technology, delivered a congratulatory message on behalf of Mr. Yoshimasa Hayashi, Minister of Education, Culture, Sports, Science and Technology. To conclude the meeting, a message of appreciation from the Prize recipients was delivered by Dr. Yumiko Kamada, associate professor, Faculty of Economics, Keio University.

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

For additional information about this Prize, please visit the following website:

<https://www.jsp.go.jp/english/e-jsp-prize/index.html>

Research Fellowship Division

Remarks to Prize Recipients by Dr. Ryoji Noyori, Chair, JSPS Prize Selection Committee (excerpt)

Having carried out a rigorous evaluation from multiple perspectives on the Prize candidates, including the creativity and future viability of their research results, the Committee selected 25 gifted young researchers as this year's Prize awardees. The highly competitive nature of this process can be seen when considering the fact that only one out of about every 17 of the initial nominees was chosen.

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.

Driven by a deep-seated belief in themselves, this year's 25 JSPS Prize awardees have amassed impressive results by challenging research topics of their own choosing. Indeed, creative scientific research compels researchers to select their own topics and seek answers to issues they entail. I believe that rational thinking based on existing knowledge alone may not be sufficient to advance "creative science." Significant scientific advances are frequently spawned by an ability to do research that invites unexpected results. That is to say, serendipity may play a large part in achieving scientific milestones. Looking back over the history of science, a great many innovative results have been obtained through self-learning by early-career researchers who merged a strong sense of curiosity with a unique sense of intuition.

"Individual creativity" is not, however, the only thing that has propelled rapid advances in the development of transportation systems or IT technologies; what also did was the collective creation of knowledge by groups. That which

hasn't been achieved individually may be achieved through an expeditious amassing of many people's knowledge and wisdom. The more people with whom you create opportunities to associate and the larger the groups with which you affiliate, the greater your possibilities will be of acquiring and realizing new concepts.

Acting in concert with the world, Japan will need to create an environment in which knowledge is rapidly marshalled and holistically amassed. Within it, it will be incumbent upon you to pass on optimum conditions for survival to future generations by tackling and overcoming problems afflicting humankind, such as unprecedented changes in the global climate, depletion of energy resources, and loss of biodiversity.

I hope that each of you, the recipients of this year's JSPS Prize, may keep these thoughts in mind as you go on to create many new links and collaborations with people in and outside Japan in ways that cut across fields of the natural sciences, social sciences and humanities, and as you take on vibrant roles as leaders on the world stage.



Fourteenth JSPS Prize Awardees: Their Work and Aspirations

Twenty-five researchers were awarded the 14th JSPS Prize. Among them, six were also given the Japan Academy Medal.

They describe their research initiatives in the following essays.

For more information about the Japan Academy Medal, please visit the following website: <http://www.japan-acad.go.jp/en/news/2018/011201.html>



Dr. Yumiko Kamada

Associate Professor, Faculty of Economics,
Keio University

Research Subject: Islamic Art

Carpets That Bind the World: Indian Carpets and Their Journey toward the Kyoto Gion Festival from a Perspective of Global History

During the Kyoto Gion Festival, people can still see several historical carpets from south India (Deccan) being used as float covers. These carpets were brought to Japan by the Dutch East India Company in the Edo period. Strange as it may sound, Japanese collections, including those in Kyoto, form one of the major concentrations of Deccani carpets in the world.

In contrast to Indian cotton textiles, which have been studied in detail in the fields of history, economic history and art history, Indian carpets as a commodity have not been studied in depth. Therefore, I have tried to reconstruct the circumstances in which they were produced, circulated and received in different parts of the world.

My research has revealed that these Deccani carpets had more significance as trade goods than their high-quality Persian and north Indian counterparts. Moreover, their function and significance changed as they moved from the area of their production to various parts of the world such as Portugal, England, The Netherlands, and Japan. Despite the fact that Japan had established a seclusion policy in the Edo period, through the activities of Dutch traders the Japanese became as fascinated by Indian carpets and textiles as Europeans did during that time.

As an art historian specializing in Islamic art, I would like to contribute to the academic community by exploring research topics such as this that other scholars have not studied.



Dr. So Nakaya

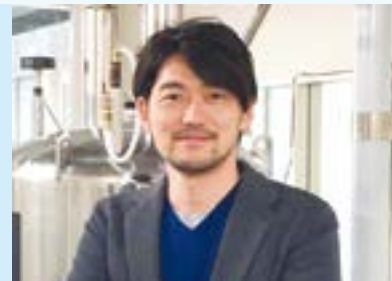
Assistant Professor, Academic Assembly Institute
of Education, Shinshu University

Research Subject: History

Research on State Formation in Late Medieval Italy

My study clarifies how Italian city states of the later Middle Ages had unique forms of state elements characteristic of later modern states. Past research has focused on policies created by rulers to study the process of the formation of state elements or the rise of the *raison d'état* (national interest) that defines state monopolization of force and good of the state as absolute priorities. Unlike so-called top-down studies of state formation, my study focuses on citizens' actions in courts and legislatures by using internationally unexamined trial records and parliamentary proceedings to clarify the "bottom-up" state formation process, namely the creation of a state through interactions between government and citizens. Specifically, it shows how numerous strategic appeals to courts by citizens supported the formation of the state order, and how appeals for pardons—requests for the reversal of convictions—impacted the attitude of governments that prioritized the good of the state over the law, demonstrating how citizens' unconscious influence on state systems contributed to the formation of new states.

This study of new state formation is expected to greatly impact contiguous fields such as Chinese history, the history of Islam, other regional histories, legal history, and the history of political philosophy.



Dr. Shinsuke Sando

Professor, Graduate School of Engineering,
The University of Tokyo

Research Subject: Chemical Biology

Development of Hyperpolarized NMR Molecular Probes for Sensing and Imaging Biological Systems

Living systems consist of molecules. The dynamic activity of these molecules is an unrevealed principle of living systems; abnormal activity can be a cause or result of several diseases. The simplest but best way to tackle an understanding of the molecular aspect of life is directly seeing such molecular activity in living systems.

Using a hyperpolarized molecular agent in combination with a magnetic resonance imaging (MRI) instrument is one of the most promising methods toward achieving real time analysis of molecular activity in the body. Under the hyperpolarized state, the sensitivity of molecular agents can be enhanced dramatically. Despite high expectations, the hyperpolarized molecular agent has had a critical problem, which is the very short lifetime of the hyperpolarized spin state. This problem has hampered the design and application of hyperpolarized molecular agents.

Based on an understanding of the physico-chemical property of hyperpolarized molecules, my research group has successfully explored a series of unique chemical structures that can retain the hyperpolarized state for a long time. These key structures have allowed us to design several types of hyperpolarized molecular agents. We expect that these findings will pave the way to developing long-lived hyperpolarized molecular agents and contribute to realizing sensitive molecular imaging that allows us to see "molecular activity" in the body.



Dr. Akimasa Hirata

Professor, Graduate School of Engineering,
Nagoya Institute of Technology

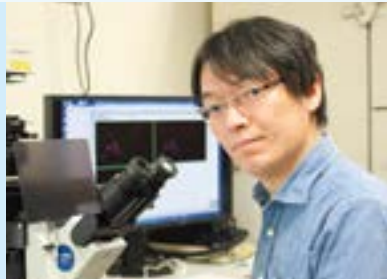
Research Subject: Computational Physics, Public
Health Engineering

Integrated Simulation Techniques for Multiphysics and Physiological Response and Their Application

Over the last decades, computational physics, including in fields related to biological bodies, has progressed dramatically with the development of computational resources. In my first paper on bioelectromagnetic modeling, I evaluated the power deposition and resultant temperature rise in human eye exposure to radio-frequency fields. When discussing the results with biological/medical researchers, they offered only limited responses. I remembered that they were not sure about the meaning of physical quantities, although the computationally-visualized data was impressive. This posed a question: How can I provide useful data for researchers in interdisciplinary fields, especially data that will convince them? I noticed that biological/medical researchers were more interested in physiological response than physical quantities, though both aspects are important.

I, then, developed integrated computational techniques for multiphysics and thermo-/electrophysiology. Since then, our computational results have been used widely. In particular, some metrics and limits of human exposure to electromagnetic fields have been derived from our computations. They are also being used for real-time risk evaluation of ambient heat (heat-related illness), as diagnosis techniques in medical applications, and for designing antennas for wireless communications, among other applications.

My current research challenge is to develop novel risk assessment and medical diagnosis systems based on machine learning using computational data.



Dr. Masaaki Komatsu

Professor, Graduate School of Medical and Dental
Sciences, Niigata University

Research Subject: The Molecular Mechanisms and
Physiology of Selective Autophagy

Elucidation of the Role of Aberrant Selective Autophagy in Pathogenic Mechanisms of Digestive Diseases

Autophagy is an intracellular protein degradation pathway mediated by lysosomes. Among several known autophagic pathways, the best understood is macroautophagy (hereafter referred to as autophagy), which is characterized by the formation of a double-membrane structure, called the autophagosome, that fuses with the lysosome. Since the discovery of the Atg-related gene (*ATG*) in *S. cerevisiae* by Dr. Yoshinori Ohsumi (2016 Nobel Prize in Physiology or Medicine), the study on autophagy has extensively expanded.

In 2005, we succeeded for the first time in generating conditional knockout mice for *Atg7*, an essential gene for autophagy. Since then, my group has investigated the pathophysiological role(s) of mammalian autophagy, in particular using liver-specific autophagy-knockout mice. As a result, we discovered unexpected role(s) of autophagy in cellular homeostasis and stress-response. My research has provided new insight into the role of autophagy, which had been thought to be simply a provider of building blocks in response to nutrient starvation.

The goal of my research is to clarify the high-order function of autophagy. Especially, my group is investigating the molecular mechanisms and physiology of selective autophagy for soluble and specific proteins involved in metabolisms or in stress-response pathways. I believe that our research will trigger novel concepts of autophagy.



Dr. Toshiro Sato

Associate Professor, School of Medicine,
Keio University

Research Subject: Uncovering the Mechanism of
Intestinal Stem Cell Self-renewal

Development of Organoid Culture System for Elucidation of Human Diseases

The development of organoid technology has enabled us to dissect dynamic biological responses in tissue stem cells. My research group applied organoid technology to human tissue samples and established an organoid library encompassing diverse digestive diseases, revealing the preservation of disease phenotypes in patient-derived organoids. Bio-archiving of human diseased tissues will contribute to drug discovery, personalized medicine, and basic cancer biology.

We recently succeeded in the visualization and lineage tracing of human cancer stem cells where fluorescently labelled cancer stem cells self-renewed and gave rise to differentiated cancer cells in xenografted tissues of mice. Contrary to previous notions, we demonstrated that human cancer cells are plastic and differentiated cancer cells that can revert back to cancer stem cells, which provides clinical insights into therapeutic strategies targeting cancer stem cells.

We also succeeded in the genetic introduction of cancer gene mutations in human colon organoids, and established a defined human genetic cancer model. This work was published in 2015, 100 years after the landmark achievement of Dr. Katsusaburo Yamagiwa's first establishment of artificial cancer using a coal tar-induced rabbit carcinogenesis model in 1915. We hope our technology will answer diverse clinical questions that eventually translate to the treatment of patients.



Award Ceremony Held for the Eighth *Ikushi* Prize

Graced by the presence of Prince and Princess Akishino, the eighth *Ikushi* Prize award ceremony was held by JSPS at the Japan Academy on 6 March.

Purpose of the Prize

In 2009, JSPS received an endowment from Emperor Akihito on the 20th year of his reign. Amidst a severe economic environment in Japan, His Majesty's desire was to encourage and support young scientists who are working diligently to advance their studies and research. In deference to his wishes, JSPS established the *Ikushi* Prize program and placed it into operation in FY 2010. It functions to formally recognize outstanding doctoral students who can be expected to contribute to Japan's future scientific advancement, while seeking to fan the flames of their enthusiasm for educational and scientific pursuit.

Selection Process

For the eighth *Ikushi* Prize, last year 152 outstanding doctoral students were nominated by Japanese universities and academic societies. A preliminary screening of the candidates was carried out by the JSPS Research Center for Science Systems, after which the program's 9-member Selection Committee made the final selection of 18 awardees.

Award Ceremony

The award ceremony opened with remarks from JSPS president Dr. Yuichiro Anzai, followed by Selection Committee chair Dr. Takeshi Sasaki, who reported on the process used in vetting the 18 recipients, who were then given an *Ikushi* certificate and a medal along with a purse of ¥1.1 million.



Afterwards, Mr. Toshiei Mizuochi, State Minister of Education, Culture, Sports, Science and Technology, delivered a congratulatory message on behalf of Mr. Yoshimasa Hayashi, Minister of Education, Culture, Sports, Science and Technology. To conclude the meeting, a message of appreciation from the Prize recipients was delivered by Ms. Yukino Hatazawa, Graduate School of Life and Environmental Sciences, Kyoto Prefectural University.

Following the ceremony, a celebrative tea party was held. Attended by Prince and Princess Akishino, the Prize recipients and their guests, an atmosphere conducive to pleasant conversation was enjoyed by all.

For more information about the *Ikushi* Prize, please see the following website:

<https://www.jps.go.jp/english/e-ikushi-prize/index.html>

Research Fellowship Division



Speech "On Receiving the Eighth *Ikushi* Prize" By Yukino Hatazawa, Graduate School of Life and Environmental Sciences, Kyoto Prefectural University

*I wish to begin by extending our deepest appreciation to Their Majesties the Emperor and Empress for the enduring support they offer to young researchers like us and for the endowment they so graciously donated to establish this *Ikushi* Prize. Our sincere appreciation is also extended to Prince and Princess Akishino, who honor us with their esteemed presence in this ceremony. We greatly appreciate the opportunity given us to bask in the splendor of this radiant Prize, though it is an honor far too great to be deserved.*

Japan is quickly becoming a super-aging society of a kind not seen in other countries of the world. Along with this trend, Japan's social welfare budget is becoming increasingly stressed due to the need to cover the costs of geriatric treatment and care including for sarcopenia (aged-muscle atrophy), which is the topic of my research. As life gets more convenient for Japan's younger generation, maintaining good health becomes increasingly difficult for them due to a lack of

exercise. This problem is bound to occur in other countries around the world in the near future.

Laboring in a rapidly maturing society, we, the younger generation of researchers in Japan, need to take a global lead in finding solutions to conditions related to aging, such as sarcopenia. Accordingly, I am working to elucidate the molecular mechanisms of exercise and atrophy, while advancing basic research on the development of anti-atrophic/exercise-mimetic foods, and pharmaceuticals.

The research facilities at my university are not the best endowed. When I was in my first year of a master's program, I and my academic advisor moved from Tokyo to Kyoto, where we set up a research lab from scratch. I purchased and maintained research equipment and reagents, managed the lab's funding, repaired old experimental apparatuses, and instructed juniors. I not only conducted experiments needed to advance my research but also carried out various routine tasks. In order to do our research inexpensively, I created our own experimental

systems with the intention of producing the best results possible given our limited research funding. By way of this experience, I realized that good research is not necessarily dependent upon research facilities, having learned that what's critical is the drive and effort of the researchers themselves. Leveraging this experience, I want now to advance my research by working in collaboration with many researchers in private companies as well as in universities in an effort to create practical applications to help people suffering muscle atrophy.

*Using today as a fresh starting line, our group of *Ikushi* laureates will go on to embrace new dreams and to challenge ever-more daunting frontiers. Now, we take this opportunity to extend a special word of gratitude to our mentors, whose warm tutelage has been invaluable in advancing our research. We also wish to extend a hearty thanks to our colleagues who work with us and assist us in our joint endeavors, and to our families for their understanding and unrelenting support.*



A Leap toward Future Science: WPI Booth at AAAS Annual Meeting



The 2018 annual meeting of the American Association for the Advancement of Science (AAAS) was held in Austin on 15-19 February. JSPS set up a booth at it to introduce the World Premier International Research Center Initiative (WPI), and conduct a workshop on the contribution of science and technology to Sustainable Development Goals (SDGs), titled “Urban Nexus; Harnessing Science, Technology and Innovation for Sustainable Urban Cities.” It was held in collaboration with the Japan Science and Technology Agency (JST). Operating for four days during the AAAS meeting, the booth disseminated information on the research activities of the eleven WPI centers situated across Japan, while providing a sphere for spurring science communication on the

world’s most advanced research undertakings.

The WPI team taking part in the meeting included WPI program director Dr. Akira Ukawa and WPI Academy director Dr. Toshio Kuroki. It worked to raise the international visibility of the WPI program by introducing the leading-edge research activities of the WPI centers while engaging in exchanges of views with other booth exhibitors, researchers, science journalists, representatives of research institutions around the world, and high school and college students. Manning the booth, designed with a wall tapestry showing the eleven WPI centers, were WPI staffs from the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and JSPS, along with outreach personnel from each WPI center. They briefed about 400 visitors on the WPI program’s initiatives and the research activities of each WPI center.

JSPS will continue conducting outreach activities like this one while leveraging its international cooperative relationships in building wide public awareness in the important role of science.

For highlights of the 2018 AAAS Annual Meeting, please see:

<http://meetings.aaas.org/>

To view the program of the workshop, please see:

https://www.jst.go.jp/EN/about/sdgs/doc/aaas2018_WS_poster.pdf

Center for World Premier International Research Center Initiative
(WPI Program Center)

JSPS London Co-hosts UK-Japan Symposium on Energy-related Materials

The ability to generate and store energy is one of the key challenges facing humanity. Understanding the behavior of energy materials on an atomic scale is vital to optimising their properties in ways that provide needed energy in an economical and environmentally sound way. JSPS, the Engineering and Physical Sciences Research Council (EPSRC), and the Science and Technology Facilities Council (STFC) ISIS Neutron and Muon Source co-organized this symposium on the study of energy-related materials using large facilities such as ISIS and the Diamond Light Source.

The symposium was held near STFC’s Rutherford Appleton Laboratory, home of ISIS and Diamond, on 22 February. Attracting around 90 researchers, the meeting sought to encourage collaboration between UK and Japanese scientists working in the energy materials area. It highlighted how facility-based techniques such as x-ray and neutron scattering can provide key information for use in developing new materials that help to tackle energy production and storage challenges.

Talks at the meeting were wide-ranging, including on the role of neutron and x-ray diffraction in the understanding of chemical and electrochemical energy storage systems; development of polymer electrolyte fuel cells for zero emission vehicles, where water absorption on the fuel cell cathode catalyst surface has been studied using x-ray methods; neutron studies on cathode material phases

using a cell for examining battery discharge in-situ; and measurement of intrinsic diffusion coefficients for ion mobility in Li-ion battery materials using muons. X-ray techniques for imaging automobile exhaust and fuel cell catalysts were highlighted, and the contribution of neutron diffraction to studies of thermoelectric materials, which enable the conversion of waste heat to useful energy, were described. The use of hydrogenases, which play central roles in the metabolism of micro-organisms, for fuel cell catalysts was discussed.



The participants of this symposium were impressed by the scientific possibilities of synchrotron radiation and muon beam in analysing energy-related materials, as explained by the presenters on both the Japan and UK sides. It is expected that new collaborations between Japan and the UK will strengthen the pursuit of these challenging research areas.

JSPS London Office

Nominations Invited for Hideyo Noguchi Africa Prize

Nominations are being accepted for the Medical Research Category of the Third Hideyo Noguchi Africa Prize.

In the footsteps of Hideyo Noguchi, this Prize recognizes and honors individuals who have made highly meaningful contributions in fields of medical research accruing to the cure and treatment of infectious and other diseases prevalent in Africa and who have contributed significantly to the improvement of public health on the Continent—thus contributing

to the health and welfare of the African people and, by extension, to all humanity.

The nomination deadline is Tuesday, 31 July 2018.

For more information, please see the Prize’s website:

<https://www.jps.go.jp/english/e-noguchiafrica/index.html>

International Policy Planning Division

France-Japan Joint Forum Held on Future Smart Cities



On 13-14 February, a France-Japan Joint Forum was held on the theme “Challenged Future Cities.” Venued at Sorbonne University in Paris, the event was co-organized by the University and the JSPS Strasbourg Office and supported by the Embassy of Japan in France.

The Forum was coordinated by Prof. Akihiro Nakao (The University of Tokyo) on the Japan side and Prof. Serge Fdida (Sorbonne University) on the French side. Accentuated by such



Prof. Nakao

key words as Internet of Things (IoT) and AI, the discussion addressed changes in urban life that will accompany the advent of future smart cities and the innovations needed to be spawned by science and technology to meet the



Sorbonne University

challenges of future modalities and structures of urban living. The theme was addressed by a well-rounded cast of frontline researchers in various related fields. They included Prof. Yusuke Obuchi (The University of Tokyo), Mr. Goro Kobayashi (Fujitsu Ltd.), Mr. Alexis Susset (SORACOM), Prof. Masahiro Bessho (Toyo University), Prof. Hakima Chaouchi (Telecom SudParis, French Ministry for Higher Education, Research and Innovation), Prof. Abdelmadjid Bouabdallah (University of Technology of Compiègne), Prof. Jean-Gabriel Ganascia (Sorbonne University), and Dr. Régis Chatellier (CNIL). The audience, which included many specialists, listened with riveted interest to their presentations.

The event was highly successful in achieving the dual purpose of these France-Japan Joint Fora, which is to provide a platform for strengthening exchange between Japanese and French researchers while generating new networks among researchers in different fields.

For more information about the JSPS Strasbourg Office, please visit our site: <http://jps.unistra.fr/>

JSPS Strasbourg Office

Japanese-German Symposium Held on Biomimetics



Over the two days of 20-21 April, the 23rd Japanese-German Symposium was held on the theme “Biomimetics: Learning from Nature for an Innovative Future.” Venued in Frankfurt, the event was co-organized by the JSPS Bonn Office and the German JSPS Alumni Association (German JSPS Club). It assembled about 130 participants, who had mostly experienced research under JSPS programs.



Prof. Dr. Menkhaus

The first day opened with remarks by German JSPS Club chair Prof. Dr. Heinrich Menkhaus, who offered a eulogy for Dr. Yasuo Tanaka and Dr. Eiichi Arai, two former Bonn Office directors who had passed away earlier in the year. Welcome remarks were then delivered by representatives from both Germany and Japan, starting with Ms. Setsuko Kawahara, Consulate General of Japan in Frankfurt. After an introduction

of their topics, two sessions were held. The historical background of Japanese-German scientific exchange was set by a talk given on Dr. Johannes Justus Rein (1835-1918), titled “A German Geographer in Japan.” Then, reports were given on the state of robotics and artificial intelligence in the two countries. The second day of the symposium also featured two sessions, in which such subjects as “insects and photonics” were discussed and the subject of biomimetics was addressed from cellular and biomedical scientific perspectives.

The many researchers who attended this event engaged the speakers in spirited bouts of questions and answers after each session, with lively discussions on the topics even carrying over into the coffee breaks. The symposium ended with remarks by JSPS Bonn Office director Prof. Dr. Keiichi Kodaira, who said that he looked forward to ever-more radiant horizons in Japanese-German scientific exchange, and thanked the participants for making the event such a rousing success.

For the symposium program and the CVs, abstracts and presentation materials of the speakers, please visit the Bonn Office’s website:

<https://www.jps-bonn.de/veranstaltungen/treffen-der-jps-stipendiaten/2018-biomimetics/>



Prof. Dr. Kodaira

JSPS Bonn Office

International Seminar and Medal Award Ceremony Held in Thailand



On 8 February 2018, an international seminar, themed “EEC (Eastern Economic Corridor) and Sustainable Development,” was held in tandem with a JSPS RONPAKU Medal award ceremony in Bangkok, Thailand.

Co-hosted by JSPS, the National Research Council of Thailand (NRCT), and JSPS Alumni Association of Thailand (JAAT), this international seminar is convened annually for the purpose of disseminating information on JAAT activities to not only members of academia but also of the general public. It, moreover, serves as a vehicle for promoting and strengthening research collaboration between Japan and Thailand. As this year (2018) marks the 40th anniversary of the MOU signed between JSPS and NRCT, a celebrative message highlighted the seminar’s opening remarks.

In line with the seminar’s main theme, an engaging keynote speech and vigorous panel discussion were carried out by distinguished researchers. Over 80 participants from both Thailand and Japan enjoyed the fruitful opportunity that the event gave them to interact with each other and form interpersonal networks.

The JSPS RONPAKU Medal award ceremony was held

following the seminar. Since 2003, JSPS has hosted this ceremony to honor Thai researchers who have obtained PhDs from Japanese universities through participation in the RONPAKU Program.

This year, RONPAKU medals and JSPS Alumni badges were presented to two RONPAKU graduates, Dr. Noppol Arunrat (Mahidol University) and Dr. Seksan Paping (National Metal and Materials Technology Center). They successfully obtained their doctoral degrees in 2016. During the ceremony, they gave presentations on their PhD theses.

At present, 218 Thai researchers have earned PhDs by way of the RONPAKU Program. This is the largest number RONPAKU graduates among all the countries covered by the program.

On the same day, JAAT also held an Executive Committee meeting, its General Assembly, and JSPS BRIDGE Fellowship awardee presentations.



For further details on these events, please visit the Bangkok Office’s websites.

http://jspss-th.org/jspss_en/2018/02/08/1807/

http://jspss-th.org/jspss_en/2018/02/08/1819/

JSPS Bangkok Office

Science Symposium on “Innovations and New Challenges” Held in Egypt

On 24 March, the JSPS Cairo Research Station held a science symposium in collaboration with Al-Azhar University and the JSPS Alumni Association in Egypt (JSPSAAE). Themed the “Egypt-Japan Multidisciplinary Science Forum, ‘Innovations and New Challenges’,” the symposium was held at Al-Azhar University, which, tracing its history back to the 10th century, is one of the world’s oldest institutions of higher education. Originally known as the center for the study of Islamic theology, it was reorganized as a modern university in 1961.

Following the opening session, a session on study and research in Japan was held, which featured briefings on JSPS’s program offerings, the international student scholarship program offered by MEXT, and study programs offered by Kyushu University in Egypt. The many students attending the symposium listened with attentive interest to the presentations.

This time, Dr. Shigeaki Sato, professor emeritus, Kobe University and Dr. Hisham R. Ibrahim, professor, Kagoshima



Dr. Sato

Dr. Ibrahim



University were invited from Japan. They gave presentations in the biosciences and biotechnology session. Drawing upon their wealth of experience, they talked about the state of research cooperation between Egypt and Japan and what they envision to be its future vistas. Presentations were also delivered by researchers from Al-Azhar University, The American University in Cairo, and Egypt-Japan University of Science and Technology (E-JUST). Bursting to brim with an audience of 80 researchers from Al-Azhar University, 36 JSPSAAE members and supporters, 77 researchers from other organizations, and 264 students, the symposium was a resounding success.

After it, JSPSAAE held its annual meeting. Then, the lecturers, JSPSAAE members, and Al-Azhar University staff took a cruise on the Nile, in which they enjoyed each other’s company and conversations on future research cooperation among other topics.

JSPS Cairo Research Station



Top Global University Project

Introducing the Participating Schools



Selected for the Top Global University Project, Osaka University (OU) has launched initiatives focusing on three priorities—educational reform, internationalization, and diversity—to evolve into a world-leading innovative university: *GLOBAL UNIVERSITY “World Tekijuku.”*

As part of its educational reforms, OU introduced a four-term system in 2017 to replace its two-semester system. OU also conducts a talent-oriented examination and admission-by-recommendation program (World Tekijuku Entrance Examination) in addition to its written entrance examinations. This program is carried out on a university-wide basis in order to holistically evaluate the individual abilities that applicants have developed before completing high school and to admit students with diverse backgrounds and talents.

As part of its internationalization effort, OU is building “Global Knowledge Partners” with some of the world’s leading universities through its Overseas Centers and consortiums with overseas universities. These partnerships serve to facilitate cutting-edge research activities while helping to solve global issues. The University is planning to open ASEAN Campuses within the ASEAN region for the purpose of helping to solve its nations’ societal issues by leveraging OU’s accumulated research prowess and attainments.

OU considers the university to be a place where people of diverse backgrounds gather and inspire each other in ways that create new values and spawn discoveries. Accordingly, OU is committed to providing an excellent academic environment for researchers and students of all ages, nationalities, and genders.

Other Noteworthy OU International Initiatives

- UC/UCEAP Osaka Office

In December 2014, the University of California/University of



Lecture given by an emeritus professor of UC

California Education Abroad Program Osaka Office was opened to enhance academic exchange

between UC and OU as partner universities. An inter-university academic exchange agreement has also been concluded. The Office plans overseas study programs, organizes lectures conducted by UC faculty at OU, promotes student exchanges, and arranges joint research activities, discussions, and information exchanges between the two institutions.

- Multilingual Expert Program

OU’s Multilingual Expert Program was launched in 2015 as an inter-faculty educational program offered by departments in the humanities and social sciences to nurture future international leaders. The program is designed to help students develop multilingual competence and acquire specialized academic knowledge. As part of this program, OU implements an “Academic English Support Desk,” a scheme in which a native English instructor offers individual guidance to students to enhance their ability to give English presentations at international conferences.

- International Joint Research Promotion Program (International Joint Labs)

This exclusively OU program invites overseas researchers to the university, where their groups engage in cutting-edge international joint research with high-caliber OU students and researchers. The number of these International Joint Labs increased to 57 in 2017 from 22 in 2014.

For more information on OU’s programs, please visit our website.

<http://www.osaka-u.ac.jp/en/index.html>



Dr. Genta Kawahara
Executive Vice President,
Osaka University

Osaka University established its Project Promotion Committee in 2014 to implement campus-wide initiatives under the Top Global University Project. In October 2016, the Project Operation Committee, comprising professors who play a leading role in the university’s operational, financial, and personnel affairs, was launched to accelerate progress in each of the Committee’s initiatives. I am responsible for promoting these initiatives in my capacity as Executive Vice President of Global Engagement.

Today, rapid progress in globalization is driving countries around the world to compete fiercely in both the economic and research spheres. To effectively address such complex global issues as energy and the environment, a shift from competition to cooperation will be needed. Given this backdrop, Osaka University

is expanding its international involvement with an aim to building strong international academic networks and making contributions to solving global issues, fostering world peace, and promoting human welfare.

As an example, we are in the process of building a research hub through substantial inter-organizational collaborations with leading overseas institutions, which we call “Global Knowledge Partners.” We plan to apply the latest results of research advanced in these collaborations to addressing global issues.

We are also preparing to open Osaka University ASEAN Campuses in four ASEAN countries—Thailand, Vietnam, Indonesia, and Brunei—to conduct research and foster individuals locally in an outreach effort to address the societal issues affecting the ASEAN region.

The aim of the Top Global University Project is to enhance the international compatibility and competitiveness of higher education in Japan. It provides prioritized support for top world-class and highly innovative universities that can lead the internationalization of Japanese universities.

Top Global University Project website: <http://www.jsps.go.jp/english/e-tgu/index.html>



Developing Human Resources to Lead the Global Society and Establishing the Kanazawa University Brand by Thorough Internationalization

In 2014, Kanazawa University (KU) was selected for the MEXT's Top University Project, under which it is carrying out three strategies to dramatically reform and internationalize the university.

- 1: Provide high-quality education based on unique global standards for human resources training
- 2: Lead the globalization of Japan by nurturing students who exemplify the "Kanazawa University Brand" and who will play active roles in the global arena
- 3: Become the core of a worldwide network of higher education and research in East Asia

The diagram to the right summarizes the five strategies adopted as the Kanazawa University Global Challenge Series which are defined to take actions.

In 2016, KU established its Institute of Liberal Arts and Science, which works to foster students that exemplify the Kanazawa University brand. In doing so, a continuum is established between the university's undergraduate and graduate courses while education is carried out based on the "Kanazawa University Global Standard (KUGS)."

KU is working to strengthen the English proficiency of its Japanese students while increasing the enrollment of overseas students. Toward elevating the international currency of its education, KU is expanding the scope of its courses taught in English and increasing the number of programs in which a degree can be earned in only English. In the future, we plan to provide English instruction in 50% of our undergraduate courses and in 100% of our graduate programs.

Toward creating a strategic international education and research network, we have newly established overseas bases for education and research exchange in the US, Belgium, China, and Thailand during the past three years. Utilizing these bases, KU



Kanazawa University Global Challenge Series



is expanding its technical training programs at local research institutions and internship programs at local companies for KU students, and offering preliminary education to students who plan to matriculate our university. In the future, we plan to mutually establish satellite campuses with these countries.

In the area of research exchange, KU is working to position itself as a core university within East Asia by carrying out systematic joint research with institutions in the region and around the world, promoting global exchange among young researchers and graduate students, inviting excellent overseas researchers to KU, and establishing international joint degree programs.

For further information, please visit our "Kanazawa University TGU Project Website."

<https://sgu.adm.kanazawa-u.ac.jp/en/>



Yoshinobu Nakanishi

Professor, Head of the Top Global University Project Planning and Promotion Headquarters

When Kanazawa University's Top Global University (TGU) project started in 2014, I was appointed as the head of the university's TGU Project Planning and Promotion Headquarters. Under my supervision, the Headquarters functions as the control tower for the university's initiatives to thoroughly globalize KU's operation in such areas as education, research, and administration.

One unique feature of our TGU project

is the KU-SGU (Kanazawa University-Super Global University) Student-Staff System. Established voluntarily by the university's students, the system features activities in which they play the central role in planning and implementing the TGU project. In such ways, our faculty, staff and students are working together as a team in advancing the globalization of Kanazawa University.

Research and Life in Japan
By a JSPS Fellow
No. 46

Dr. Maurice Ducret Awouafack

“Study on Antibacterial Constituents of Cameroonian Medicinal Plants”

JSPS Postdoctoral Fellow, University of Toyama, 2016-Present
Senior Lecturer, University of Dschang, Cameroon, 2013-Present
Ph.D. (Organic Chemistry), University of Dschang, Cameroon, 2010



Coming to Japan from Cameroon, Dr. Maurice Ducret Awouafack is conducting research with his host Prof. Hiroyuki Morita at the University of Toyama under a JSPS Postdoctoral Fellowship. We asked Dr. Awouafack about his research activities and life in Japan.

Q: What are you currently researching under the JSPS fellowship?

I am currently doing research on antibacterial constituents extracted from Cameroonian medicinal plants. This process involves preliminary studies (ethnopharmacological and ethnomedicinal studies) carried out to select and harvest yet-uninvestigated plants used by traditional healers to treat bacterial infections. From these plant materials crude components are extracted and laboratory techniques such as chromatographies (e.g. medium pressure column chromatography, open column chromatography, and preparative high-pressure liquid chromatography) are used for separating mixtures to finally obtain pure compounds, whose structures are determined by elucidating their spectroscopic data, mainly using nuclear magnetic resonance spectroscopy, mass spectrometry, ultraviolet and infrared spectroscopy. In this way, the antibacterial activity and other bioactivities (e.g. antioxidant, antiproliferative,

antifungal) of the extracts are determined along with their constituents. In some cases, we carry out chemical conversions of the isolated compounds to confirm their structures or to suggest the structure-activity relationship. I have recently started to analyze soil materials in an effort to extract their bioactive constituents for possible application as antibiotics.

Q: What got you interested in this research subject?

I started getting interest in natural products chemistry during my MSc and PhD studies at the University of Dschang in Cameroon, where its Research Unit of Natural Products Chemistry offered good facilities and had good collaborations with overseas professors, which made it easy for me to carry out research in this field. Moreover, Cameroon has a lot of medicinal plants, which need to be more highly recognized and valued. I wanted to do a work that would both highlight and share the medical importance of these plants. In Cameroon, medicinal plants are used in the traditional ways to treat and cure various ailments. However, we don't always know what the active compounds or their toxicities are in these plants. Research will allow pharmaceutical companies to make effective use of them in developing medical products that can be sold in our shops. I'm hoping that my research may, if even in a small way, help to develop drugs that can be used in Cameroon and standardized for global consumption. In Cameroon, our medical system is still underdeveloped, which affects the standard of people's living. We need now to improve the system and develop standard drugs so as to make medicines more easily accessible at low cost in our country—and with such achievements we can

export medical drugs.

Q: Your research will be of significant impact to your country. Why did you choose the University of Toyama to pursue it?

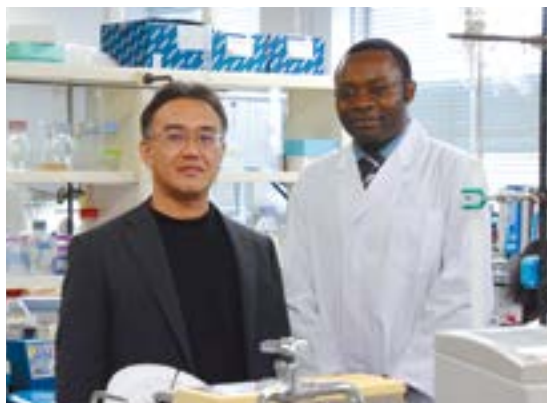
The Division of Natural Products Chemistry at the University's Institute of Natural Medicine has won a high reputation from its publications and its achievements in the field of natural products chemistry. This prompted me to contact Prof. Hiroyuki Morita, who heads this division, about the possibility of hosting me. I was very happy to receive his positive reply.

Q: Other than working with Prof. Morita at the University of Toyama, was there anything else that motivated you to pursue your research in Japan?

More generally, I was looking for a country that would offer the best facilities for me to carry out my research project. Actually, I had previously come to Japan by way of an invitation from Prof. Morita for a 6-month postdoctoral fellowship provided by the Matsumae International Foundation. At that time, he and I discussed a further visit to his research group, and the prestigious JSPS fellowship gave me this opportunity to come back.

Q: From the viewpoint of developing countries, what is the most significant research work you've been doing so far?

I think the work that we're advancing toward new drug discovery will pay significant dividends both in terms of improved healthcare and stronger economies in developing countries. We are investigating medicinal plants in these countries with a view to characterizing the chemical structures of their constituents and to determining their bioactive compounds, especially those underlying the activities



With Prof. Morita



claimed by traditional healers. In this endeavor, we are working in collaboration with research groups in developed countries where several pharmaceutical companies are exploring the biodiversity of developing countries, mainly of medicinal plants, with an objective of developing new drugs.

Q: We understand that you have done research in several countries. What drew you to them?

I've had several opportunities to travel abroad since 2008 when I was given a PhD scholarship at TU Dortmund by the German Academic Exchange Services (DAAD). Thereafter, I went to Finland for an Analytical Skills Development Course on the Chemical Weapons Convention held by the Organization for the Prohibition of Chemical Weapons at VERIFIN, University of Helsinki. Before my first visit to Japan, I was in South Africa for a postdoctoral fellowship awarded by the University of Pretoria under the supervision of Prof. JN Eloff, founder of the Phytomedicine

Programme in the University's Faculty of Veterinary Science. During these fellowships, I carried out phytochemical investigations on the bioactive constituents of Cameroonian medicinal plants. Having gained knowledge on the use of the latest analytical devices in natural products chemistry, when I returned to my home university I was able to inspire my research colleagues and share new knowledge in my field with them.

Q: What do you plan to do after your fellowship ends?

After completing my JSPS fellowship, I will return to Cameroon where I am currently lecturing at the University of Dschang. The knowledge I've gained in Japan will be useful in improving the quality and productivity of our students' studies and the work of our researchers in the field of natural products chemistry. I'd also like to continue my research with my host researcher and his team after going back to my country.

Q: Please give some advice for young researchers who may be thinking about doing research in Japan.

Researchers should not be hesitant to come to Japan if they plan to go abroad to advance their work. Japan has a wealth of good facilities in its laboratories and a first-rate environment for conducting research. If lucky, you may be awarded a JSPS postdoctoral fellowship as in my case

or other prestigious fellowship or grant to pursue your research in Japan. Being here to do research, you will be able to visit many beautiful places, enjoy Japanese culture and food, and try your hand at learning the Japanese language, which is not needed but can make your stay here more integrative.

We received a warm welcome from Dr. Awouafack, who hails from Cameroon, a country about the size of Sweden whose dense forests are among the wettest places on earth. The study of medicinal plants has brought Dr. Awouafack to Japan and to countries around the world, and engaged him in international joint research. We were very impressed to learn that this concerted research effort is forged by Dr. Awouafack to accrue benefits for the people of Cameroon. He talked to us passionately about his research which works to improve the healthcare and economies of both his own and other developing countries. We wish Dr. Awouafack the utmost success as he strives through his research to develop new and potent drugs from Cameroon's indigenous medicinal plants.



The University of Toyama and Its Neighborhood

The Division of Natural Products Chemistry at the University of Toyama is located on the hilltop Sugitani Campus together with Toyama University Hospital. Toyama is an attractive city with many interesting places to visit as well as a delicious variety of foods to enjoy. The city's fresh fish is especially alluring. In the beginning of the spring season, I really enjoy the cherry blossoms planted around the campus. During Golden Week in early May of last year, I went with some lab friends to another city in Toyama Prefecture, namely Tonami whose most attractive place is its tulip



At 2017 Tonami Tulip Fair

park. I think it must be the foremost place in the world to view an immense variety of tulip blossoms. During the same period, I went with some Vietnamese friends to the approximately 3000-meter high Mount Tateyama. The road leading up to the foot of the mountain is flanked on both sides by high snow walls at that time of the year. These attractions draw about one million tourists to the area from all over the world each year.

I have also had the chance to visit the amazing Hotaruika Museum (in Namerikawa city) to see the "firefly squids" with my host Prof. Morita and his friends after we attended the 15th International Symposium on Traditional Medicine in Toyama in 2017.

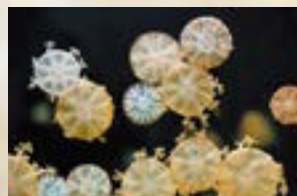
I have also enjoyed visiting several other places in Japan including Hiroshima, Kyoto, Tokyo, Shiga, Chiba, and Fukui. During those visits, I went to such famous sites as Himeji Castle, Narita Temple with its bronze Buddha



and Shinto shrine, and the Golden Pavilion in Kyoto.



At Tateyama snow-wall with Vietnamese friends



Jellyfish (*kurage*)

Called "sea moons" in Japanese, jellyfish appear like little moons floating on the water surface. During the dog days (*doyo*) of summers, waves carry them close to beach.

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



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.

Contact Information quarterly@jsps.go.jp

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