

The 8th Kobe University
Brussels European Centre Symposium

EU-Japan Initiative for Excellence: Strategic Research Partnership in Medicine, Biotechnology and Social Sciences

Jointly organised with Vrije Universiteit Brussel

Date: 21 November 2017



Preface

I am pleased to present this report on the 8th Kobe University Brussels European Centre (KUBEC) Symposium “EU-Japan Initiative for Excellence: Strategic Research Partnership in Medicine, Biotechnology and Social Sciences” , which was held in Brussels on 21 November 2017. KUBEC has been holding an annual symposium in Brussels since its establishment in 2011. Since then, we have been striving to expand our academic network in Europe and to raise the profile of Kobe University and other Japanese universities. To this end, we place a high emphasis on holding academic workshops and seminars at KUBEC or at partner institutions as well as the annual symposium in Brussels, featuring guest speakers from both European institutions and Japanese universities.

This year marked the second time that the symposium was held in collaboration with Vrije Universiteit Brussel (VUB), where KUBEC is located. In July 2015 KUBEC relocated to the international office buildings of VUB in order to fulfil its role as a base for international collaboration in education and research between Japan, Belgium, and Europe at large. This symposium is part of our initiative to strengthen collaboration with Belgian universities and to further foster joint research between Japan and Europe. This year, Kobe University welcomed participants from Japanese and European organisations including the Delegation of the European Union to Japan and the European Commission in order to bring in the perspectives of policymakers on the partnership between Japan and Europe.

The theme of the 8th symposium, “EU-Japan Initiative for Excellence- Strategic Research Partnership in Medicine, Biotechnology and Social Sciences -” focused on the shared challenges Japanese and European societies face as they pursue future development. The latest research results and applications of globalisation and higher education, biotechnology, migration and community building, and healthy and active ageing were introduced by both Japanese and European researchers in the hope of establishing future collaboration using advanced knowledge or technology for each project. Furthermore, we also discussed perspectives on interdisciplinary research and education in global issues that various countries now face, welcoming prominent researchers from around the world. As a result of this symposium, collaborative projects are under discussion or have already begun. I hope this event will enhance Japanese and European research collaboration for the betterment of our societies.

Hiroshi Takeda

President
Kobe University





The 8th Kobe University Brussels European Centre Symposium

EU-Japan Initiative for Excellence : Strategic Research Partnership

in Medicine, Biotechnology and Social Sciences

Organised jointly with Vrije Universiteit Brussel

Tuesday 21 November 2017
Vrije Universiteit Brussel

**SPEAKERS AND MODERATORS' BIOGRAPHIES
AND ABSTRACTS**

Opening 9:30-10:00

Chair **Prof. Matsuto Ogawa**, Executive Vice-President, Kobe University
Opening Addresses **Prof. Hiroshi Takeda**, President, Kobe University
Prof. Dr. Caroline Pauwels, Rector, Vrije Universiteit Brussel
H.E. Mr. Kazuo Kodama, Ambassador of Japan to the European Union
Dr. Philippe Vialatte, Deputy Head of Unit, International Cooperation Directorate,
Directorate General for Research and Innovation, European Commission

Parallel Session 1 10:00-13:30

U-Residence large meeting room

Innovation in Higher Education and Social Sciences: Regional Culture and Global Challenges

Parallel Session 2 10:00-13:30

U-Residence small meeting room

Microorganisms in biotechnology

Parallel Session 3 14:30-18:00

U-Residence large meeting room

Migration and Community Building

Parallel Session 4 14:30-18:00

U-Residence small meeting room

Healthy and Active Ageing: a Key Role for Physical Exercise

Closing Remarks 18:00-18:15

Organiser: Kobe University
Co-Organiser: Vrije Universiteit Brussel

Opening Speech

Prof. Hiroshi Takeda

President of Kobe University



Distinguished guests, ladies and gentlemen, I would like to extend my heartfelt welcome to all of you to the 8th Symposium of Kobe University Brussels European Centre (KUBEC), entitled 'EU-Japan Initiative for Excellence – Strategic Partnership in Medicine, Biotechnology and Social Sciences', jointly organised with Vrije Universiteit Brussel (VUB) for the second year in a row.

It is a great pleasure and honour to deliver this opening address in the presence of many distinguished guests and familiar friends. Please allow me to begin by expressing my sincere gratitude in particular to our honourable guests,

1. His Excellency Ambassador **Kazuo KODAMA** (Mission of Japan to the European Union) and
2. Dr. **Philippe Vialatte** (Deputy Head of Unit, International Cooperation Directorate, Directorate General for Research and Innovation, European Commission), representing Dr. **Robert-Jan Smits** (Director General, Directorate General for Research and Innovation, European Commission).

I would also like to take this opportunity to express my deepest gratitude to

3. Professor **Caroline PAUWELS** (Rector, VUB),
 4. Professor **Sonja Snacken** (Vice-Rector, International Relations, VUB),
- and the International Relations and Mobility Office of VUB, for their warm support in organising today's symposium.

Kobe University has been holding its KUBEC Symposium every year since 2011. With the participation of researchers and students from Japanese and European institutions, the annual Symposium has been an important occasion for the participants to discuss collaboration in research and education. Last's year Symposium focused on challenges to society transition both in EU and Japan, and examined research collaboration on emerging sciences. The symposium was also the very first Symposium jointly organised with VUB. International research collaboration on Migration, ICT and Particle Physics amongst the presenters started or expanded after the event. I am pleased to highlight the fact that, for instance, today's Session 3 takes up Migration again, this time building on last year's session and also welcoming a new group of researchers.

This year Kobe University welcomed great Europeans to its academic family and strengthened its ties with the EU. On 16th of October, we conferred a Doctor Honoris Causa upon Dr. Hans-Gert Pöttering, the former President of European Parliament, who became a member of the Kobe University Advisory Board. Moreover, we welcomed Mr. Patrick Vittet-Philippe as the advisor to the KUBEC. Mr. Vittet-Philippe contributed to the EU-Japan relationship as Head of Japan and Russia Desks, International Cooperation Directorate, Directorate General for Research and Innovation, European Commission. Since he was appointed as the advisor, KUBEC's activities expanded significantly widely and thanks to his initiatives, we were able to invite a number of session speakers from the European Commission.

Today's symposium theme, 'Initiative for Excellence' is an official catchphrase of Kobe University's Vision since 2015. This catchphrase represents our pledge to encourage innovative research that defies the boundaries between the humanities and the sciences for the betterment of our societies. Today's Symposium envisages such an initiative in the context of EU-Japan academic cooperation, covering four sessions – two in the sciences, two in the humanities and social sciences. In the context of an ageing and diversifying population in the EU and Japan, we need innovative means not only for promoting a healthy life but also for integrating new cultures in our societies. I believe that, in the four sessions, researchers from the EU countries and Japan will offer and discuss valuable international perspectives on their respective topics.

It is my sincere wish that today's Symposium will constitute an academic dialogue between participants from the EU and Japan.

Thank you very much for your participation today.



Prof. Dr. Caroline Pauwels

Rector of Vrije Universiteit Brussel

Dear Prof. Takeda, President of Kobe University,
Dear Vice-Presidents,
Dear guests and colleagues,

Welcome to our premises for the 8th Kobe University Symposium, and the second one jointly organized with VUB.

Kobe University and VUB have quite some similarities. Our cities have both around 1M – 1,5 M inhabitants and are really cosmopolitan regions in the country. Our universities have around 16.000 students and are comprehensive. The diversity of the city's population and the city's attraction for international students is reflected in the number and nationalities of the students.

We share the same values of what you call 'independent thinking.' In fact, VUB has the principles of 'Free Inquiry' written into its articles of association. These principles are based on the writings of the French mathematician and philosopher Henri Poincaré: 'Thinking must never submit itself'. Today, it is still our basic philosophy.

Kobe University puts lots of emphasis on interdisciplinarity. I am very eager to learn more about your newly established Graduate School of Science, Technology and Innovation, where you combine

natural and social sciences. Interdisciplinarity is a key goal in the new strategic policy plan of our university. It is on the one hand a breeding ground for innovative ideas in research, and on the other hand it is our duty to educate our students with the required flexibility and broad insights to prepare them for new future career paths.

We obviously have a lot in common although being in different parts of the world. I am very pleased that Kobe University made the world a bit smaller by setting up the Brussels European Centre (KUBEC) on VUB premises.

Everywhere, the work floor is becoming more and more international. This is due to the ongoing globalization, but also to the fact that global challenges require global partnerships. Although we are aware that there is a huge amount of research talent all over the world, we want to invest in strong structural links with a number of leading universities, without imposing limitations to bottom-up initiatives. Strategic partnerships are extremely important to realize more than just individual student exchange mobility and occasional research synergies. Sustainable cooperation structures are supported at the inter-institutional level, have a certain scale and cross borders of individual faculties or schools and research groups. It entails collaboration with companies, non-profit organizations, government agencies, independent research institutes, and more, in order to withstand international competitiveness. This requires building, a lot of building, and today offers us an occasion to start doing just that.

Looking at the programme of today, I am convinced that this amount of knowledge sharing will lead to lots of building blocks to pave the way for joint research and other collaboration possibilities.

H.E. Mr. Kazuo Kodama

Ambassador of Japan to the European Union



Prof. Hiroshi Takeda, President of Kobe University,
Prof. Caroline Pauwels, Rector of Vrije Universiteit Brussel,
Distinguished Guests,
Ladies and Gentlemen,
Good Morning,

I am delighted to be given an opportunity to give this opening address. The topic of today's symposium is "*EU-Japan Initiative for Excellence*".

(Japan and the EU united by common values)

Let me start by acknowledging the fundamental truth about the relationship between Japan and the

European Union. Japan and the EU are united by our common values of freedom including academic freedom, democracy and the rule of law which constitute the foundations of our political and economic strategic partnership.

It is important to remember that the academic partnership between Japan and Europe is based on the belief that we share universal values. This means both of us are committed to upholding academic freedom, including the freedom to publish for public and critical reasoning as well as the free access to knowledge.

From this perspective, I am delighted that *the 8th Kobe University Brussels European Centre Symposium* is a testament to a deepening academic partnership between Japan and Europe.

(History of the partnership in education between Japan and the West)

Next year will mark the 150th anniversary of the Meiji restoration and the start of the Meiji Government.

In 1868, Japan decided, in order to safeguard its independence, to open the country and adopt Western civilization, thereby radically transforming the Japanese nation from a feudal society to a modern capitalist nation.

A good example of the then Japanese leaders' determination to modernize Japan was reflected in the Charter Oath of Five Articles promulgated by the Emperor as the basic policy of the Meiji Government. I would like to introduce to you the two articles which I believe are most relevant to our discussion today.

Article 1 says, "Deliberative assemblies shall be established on a broad basis and all measures of government decided in accordance with public opinion."

This marked the beginning of the evolutionary history of democratic development in modern Japan.

Article 5 says, "Knowledge shall be sought through the world so that the welfare of the nation will be enhanced." This shows that the Meiji leaders were keenly aware of the power of knowledge.

In order to achieve Japan's transformation and opening to the world, the Meiji Government did its own homework and also sought assistance from the Western countries.

With respect to its own homework, the government worked to spread and develop education in schools. In 1886, compulsory education was set at not more than four years, but in 1907, this was extended to six years. By 1910, the rate of primary school attendance exceeded 98 percent, the gap between boys and girls disappearing almost completely in the process. This means that throughout the latter part of the 19 century, Japan cultivated its own soil to absorb western knowledge of science and technology.

While the latter half of the 19th century saw remarkable scientific progress in Western countries, the fruits of these scientific discoveries and studies were swiftly incorporated into Japan, and all kinds of modern scientific studies and education were undertaken in universities and elsewhere.

Until the late 1880's, a large number of university lectures were conducted by Western teachers in languages other than Japanese. The majority of those hired foreign teachers were European, including from the UK, France and Germany. For example, the teaching language of Japanese medical schools was mainly German until the late 19th century. The first dean of the Imperial College of Engineering in Tokyo was Scottish. And, the model of the first commerce school in Japan was the predecessor of the University of Antwerp (Institut supérieur de commerce d'Anvers). The academic partnership between Europe and Japan started from Japan's firm determination to learn and absorb knowledge from Western countries.

What I would like to add here is that, in the latter part of the Meiji period (around the 1880s), original studies undertaken by Japanese scholars began to appear, and almost all university lectures started to be conducted in Japanese. This was a rather unique phenomenon among non-Western nations in

modern times. More than 100 years since then, it is also interesting to note that in the world of academic studies, both students and teachers are now required to be bilingual, the most important foreign language in Japan being English.

In a nutshell, education has long been understood as a critical means to empower people to be self-reliant, to help nation-building and to excel in science and technology in order to catch up with the West. Looking back from the horizon of the 21st century, I am very happy that Japan and Europe have come a long way and have now become equal partners in friendly rivalry sharing the rich soil of cooperation in science and technology.

(Closing)

Ladies and gentlemen,

Japan and the EU have been working assiduously towards a finalization of *the Japan EU Economic Partnership Agreement* as well as *the Japan EU Strategic Partnership Agreement* as early as possible. In short, these agreements will greatly enhance freer movements of people, goods, services and capital between Japan and Europe and encourage the two to translate our shared values into concrete cooperation on the ground.

I am convinced that these two arrangements will mark the beginning of a new chapter elevating our partnership onto a higher terrain, which will boost further the ongoing academic partnerships including the collaboration between Kobe University and Vrije Universiteit Brussel.

Let me conclude by wishing *the 8th Kobe University Brussels European Centre Symposium* every success in achieving a closer research partnership between Europe and Japan.

Thank you very much for your attention.

Dr. Philippe Vialatte

Deputy Head of Unit, International Cooperation Directorate,
Directorate General for Research and Innovation, European Commission



Your Excellency, Ladies and Gentlemen,

I would like to start by thanking the organisers of the conference - Kobe University and VUB – for providing me with this opportunity to present the opportunities for Japanese researchers, research organisations and companies to participate in Horizon 2020 – the EU's Framework Programme for Research and Innovation.

This symposium comes very timely as we have just published the third and final Work Programme of Horizon 2020, covering the years 2018-2020. It provides a wide range of collaboration possibilities between European and Japanese researchers and research entities.

Horizon 2020 is the largest collaborative international research programme worldwide, with a total budget of €77 billion over 7 years. Since its beginning in 2014, we have received more than 135,000 applications to our calls for proposals and signed over 15,000 grant agreements with an EU contribution of around €29 billion.

This shows how much Horizon 2020 can be a real entry point for non-Europeans to work together with European partners on research and innovation.

The core guiding principles of the Framework Programme are **Excellence, Openness and Impact**:

- **Excellence** is vital to ensure that the best research and innovation projects are funded. Supporting the second best is not an option and would mean wasting the rare financial resources made available by the European tax payers.
- **Openness** is the common denominator. Alone and closed, a country cannot compete and cooperate globally. Openness includes being open to valuable cooperation and partnerships with third countries, and Japan in particular, to address common challenges of today and the ones of the future.
- We must also aim to deliver **impact**. Investment in research and innovation must bring tangible impacts to societies and help achieve the Sustainable Development Goals.

To achieve these objectives, we have designed in 2012 an **EU strategy on international cooperation in research and innovation**. It highlights the importance of collaborating with advanced partners such as Japan.

Also, it foresees that we prepare '**roadmaps**' that explain in detail our approach towards our strategic partner countries. We have just updated and uploaded on our website our roadmap for research and innovation cooperation with Japan and I would like to encourage you to read it.

As you know, our EU-Japan Science and Technology collaboration is guided overall by the Science and Technology (S&T) Agreement signed in 2009.

The **next EU-Japan Joint S&T Committee** under this agreement will convene in Tokyo for the fourth time this Friday (24 November); it will be one more step to move our cooperation forward.

In May 2015, an **EU-Japan Strategic Partnership in Research and Innovation** was endorsed by the EU-Japan Summit, which highlights the importance of framework conditions to facilitate increased cooperation. One of the very important framework conditions is what we call the co-funding mechanisms by which third countries provide funding to their national participants in Horizon 2020. We will also discuss them this week in Tokyo in the Joint S&T Committee.

We believe that the **co-funding scheme developed by Japan's Science and Technology Agency (JST)**, and hopefully the development of similar schemes for funding Japanese participants in Horizon 2020, could be important to further strengthen EU-Japan cooperation.

Also the **cooperation arrangement between the European Research Council and the Japan Society for the Promotion of Science (JSPS)** is an important element to increase collaborations between Japanese and European researchers.

As a result, both sides can be proud of the **substantial cooperation we have developed, in particular in strategic thematic areas** such as ICT, Aeronautics and Advanced Materials research, including Critical Raw Materials.

Overall, Japanese applicants have participated to date **517** times in **412** eligible proposals and there are so far **82** Japanese participations in **66** signed grants in particular in the following fields:

- Researchers' mobility through the Marie Skłodowska-Curie Actions;
- Environment
- Nanotechnologies and Advanced materials (NMBP); and in
- Nuclear research cooperation through Euratom.

The **success rate** for Japanese applicants to Horizon 2020 is higher than the average, at an impressive **20%**, compared to EU average of 14.7%.

There have also been a number of successful **coordinated calls with Japan – in total 9 since 2011** – launched together with:

- the Ministry of Economy, Trade and Industry (METI) in aeronautics;
- the Ministry of Internal Affairs and Communication (MIC) in ICT and Health;
- the Japan Science and Technology Agency (JST) in new materials and critical raw materials;
- and the New Energy and Industrial Technology Development Organisation (NEDO) in new energy technologies.

More coordinated calls are planned to be launched in the **recently published Horizon 2020 Work Programme covering the years 2018-2020** (notably in ICT).

Now, let me focus on Work Programme 2018-2020, which covers a wide range of calls for proposals in most areas of research. We will invest around €30 billion in R&I, aligned to the EU's current agenda and priorities.

We welcome applications from Japanese researchers, research institutes and companies in most of these calls.

The work programme 2018-2020 aims at **increasing its focus on international cooperation through flagship initiatives**. Around **30 international flagship** initiatives with over €1 billion budget will strengthen international ties of significant scale and scope on topics dedicated to cooperation in areas of mutual benefit.

There are **14 international flagship initiatives** that target cooperation with **Japan**, in **nine different thematic areas**:

- **ICT** ("5G communication networks, security, cloud, IoT, Big Data"; and "Unconventional nano-electronics");
- **Transport** ("Greener and safer aviation", "Automated road transport", "Integrated multimodal freight transport systems and logistics", and "Reduction of transport impact on air quality");
- **Energy** ("Advanced biofuels", and "Mission Innovation" on clean energy in general);
- **Health** ("Technologies for global health care", and cooperation through multilateral initiatives);

- **Disaster Risk Reduction** ("Operational forecasting of earthquakes and early warning capacity for more resilient cities");
- **Security** ("Technologies for first responders");
- **Nanotechnologies** ("Nanosafety");
- **Climate Action** ("Changing cryosphere/Arctic research"); and
- **Research Infrastructures**: ("Integrating and Opening activities").

The work programme includes also **22 call topics that specifically target cooperation with Japanese** entities and researchers. The list can be found in the annex of the **updated roadmap for S&T cooperation with Japan**, online since the end of October, which I mentioned before and which will be updated again with the results of the 4th EU-Japan S&T Committee.

Let me conclude by saying a few word on the next framework programme for R&I – **FP9**. As Horizon 2020, the guiding principles of FP9 are planned to be Excellence, Impact and Openness. Our Commissioner Carlos Moedas has said that "We need to define missions that breakdown silos", and that "we need to set our eyes on a specific target, and drive our scientific efforts towards reaching that target".

Cooperation between the EU and Japan could benefit from such a mission-oriented approach focusing on common challenges through missions of common interest that could be linked to the Sustainable Development Goals.

As regards the timeline, it is planed that the proposal for the overall budget of the EU will be adopted by the Commission in May 2018; the Commission's proposal for FP9 will then follow a few weeks after in June 2018. The implementation of the next FP will start in 2021.

I would again like to thank the organisers for providing me this opportunity to present our strategic cooperation with Japan in research and innovation, and the participation opportunities provided by Horizon 2020 Work programme 2018-2020.

I am delighted that the **VUB is a very active participant in Horizon 2020. Also Kobe University** has participated in the EU's framework programme. I am convinced that the strong international profile of Kobe University - the first Japanese university having established an office in Brussels – will provide further examples of cooperation in the years to come through our framework programme.

I wish you all a very successful symposium!







Session 1

10:00 - 13:30

Innovation in Higher Education and Social Sciences: Regional Culture and Global Challenges

Chair

Noriyuki Inoue

Kobe University (Japan)

Speakers

Chang Zhu

Vrije Universiteit Brussel (Belgium)

Hideki Iwabuchi

Mission of Japan
to the European Union (Japan)

Marlène Bartès

DG Education and Culture
European Commission

Helmut Staubmann

University of Innsbruck (Austria)

Raf Vanderstraeten

University of Ghent (Belgium)

Simon Kaner

University of East Anglia (UK)

Kiyomitsu Yui

Kobe University (Japan)

Discussant

Patrick Vittet-Philippe

Kobe University
Brussels European Centre (Belgium)

Session I was organized by Professor Noriyuki Inoue (Vice President in Charge of International Exchange and Internal Control, Kobe University), Professor Kiyomitsu Yui (Executive Assistant to the President, Kobe University) and Professor Chang Zhu (Vrije Universiteit Brussel) and chaired by Professor Inoue.

The basic idea of the theme of the Session originated in a discussion with Professor Helmut Staubmann, University of Innsbruck (Austria) when Professor Inoue and Professor Yui were in Innsbruck to attend the special lecture by Professor Inoue. Transformation of higher education in facing globalization is a repeated theme in conferences around the world in our age. In former sessions of the Kobe University Brussels European Centre Symposium, we have already picked this theme as one of the main issues. Yet the speed of the shift is so rapid that we need to catch up to the most recent trends in coping with the new situation in our daily activities of administrating and teaching in the universities. One of the most recent shifts is the tendency of the so-called 'back to the nation-state.' Thus in the Session this year we set a new angle of discussion that concerns the different reaction towards globalization according to different historical path-dependency and cultural settings of the region / locality.

Speakers were as follows: Professor Chang Zhu, Vrije Universiteit Brussel (Belgium), Mr. Hideki Iwabuchi, Mission of Japan to the European Union (Japan), Ms. Marlène Bartès, Policy Officer, Directorate General for Education and Culture, European Commission, on *EU-Japan Cooperation in Higher Education*, Professor Helmut Staubmann, University of Innsbruck (Austria), Professor Raf Vanderstraeten, University of Ghent (Belgium), on *The schooled society: the geography of education in Belgium, 1961-2011*, Professor Simon Kaner, University of East Anglia (UK), on *a new approach to delivering Japanese studies: the case of the University of East Anglia*, and Professor Kiyomitsu Yui, Kobe University (Japan), on *Innovation of Higher Education and Inter-nationalization of Japanese Studies in the case of Kobe University*. Presentations were followed by the discussion led by assigned discussant Mr. Patrick Vittet-Philippe, Adviser to the Kobe University Brussels European Centre.

With a structure that brought together eminent scholars, administrators of universities from different regions, and officers of governmental bodies in educational institutes from both the EU and Japan, the Session successfully elucidated the points of reference we need to cope within higher educational organizations now.

Session 1

Noriyuki Inoue **Chair**

Executive Vice President, Kobe University (Japan)



Professor in the Graduate School of Law, Kobe University, Japan. Awarded MSc and PhD from Osaka University, Japan in 1985 and 1996, respectively. After working for Osaka Gakuin University as assistant and associate professor, joined Kobe University as an academic member in 1995. From October 2009 to September 2011, worked as the Dean of the Graduate School of Law, and from April 2013 as the Executive Vice President of Kobe University in Charge of International Exchange and Internal Control. His research focuses on Constitutional Law and European Law.



Chang Zhu

Department of Educational Sciences,
Vrije Universiteit Brussel (Belgium)

Prof. dr. Chang Zhu is a professor in Educational Sciences at Vrije Universiteit Brussel (VUB) since 2010. Prof. Zhu coordinates the LEAD (Erasmus+ Capacity Building in Higher Education) project (from 2015-2018) as its Project Manager; and from 2013-2016 she was project coordinator of the EU-China DOC project under the EU Erasmus Mundus Program. She is the director of the EU-China Higher Education Research Center (ECHE), the Online and Blended Learning Competence Center, and the Belgian Director of the Confucius Institute at VUB. She is the promoter and principal investigator of several key fundamental research projects in the fields of higher education, internationalisation, university governance, academic leadership, international academic mobility, student competence and literacy development, educational innovation, online and blended learning, MOOC, ICT-supported learning and social inclusion. She completed her PhD research at Ghent University. Before that she was a lecturer at the Communication University of China; and consultant for the World Bank and Asian Development Bank Mission in China, engaged in development projects in China.

Innovations in higher education: trends and challenges

Abstract:

Higher Education Institutions are facing challenges such as globalisation, ranking, societal needs, new technologies and student changes. Innovations of higher education are inevitable in order to respond to the

changing needs of the society, the internal and external environment, and to improve quality and practices. New learning and teaching approaches are needed in order to enhance the development of student competences. Research innovations are crucial for universities to address issues of concern for the changing society and technologies. University leadership is relevant and important in order to strengthen the role of universities to lead the innovations in research and education in the global and international contexts.

Hideki Iwabuchi

Counsellor (Science, Technology and Education),
Mission of Japan to the European Union (Japan)



Before arrival to Brussels in July 2017, Mr. Iwabuchi experienced a series of positions in the Government of Japan, including: Director of the Office of International Planning, Higher Education Bureau, Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT); Secretary to the Minister of State for Science and Technology Policy, Cabinet Office of Japan; Director of the Office of Basic Research Programs, Research Promotion Bureau, MEXT; and First Secretary for Science and Technology, Embassy of Japan in Seoul (Korea). He got his master degrees in Syddansk Universitet in Odense (Denmark) [International Economics, 2004], and Tokyo Institute of Technology [Engineering, 1997].

Overview of Academic/Research Collaboration between Japan and EU/European Countries

Abstract:

First, the current status of collaboration is summarized based on the data.

Student exchange: While Japanese students in Europe decreased in these 20 years, European students in Japan gradually increased. But the latter is still much less than the former. Smaller European countries may have difficulty in attracting Japanese students.

Research Collaboration: Japanese researchers write academic papers more frequently with Europeans than 10 years ago. By research field, co-authorship is frequent in environmental and medical sciences, but relatively less so in materials and engineering.

Japan-China-Korea: Compared to Chinese and Korean students, Japanese students tend to enroll in European universities, and Japanese researchers tend to collaborate with Europeans.

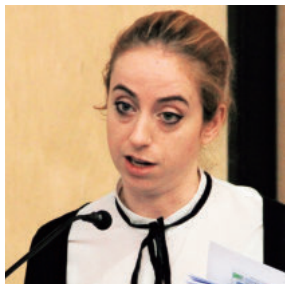
Second, the policy trend on collaboration is illustrated.

Historical view: Communication of intellectuals between Japan and Europe has continued for these five centuries. In the 19th century, the Japanese government invited many experts from and sent many students to Europe.

Leaders' Vision: Japan-EU Summit recently endorsed a Joint Vision on the new strategic partnership in research and innovation. Following the vision, several new schemes for cooperation were established.

Open to the World: European Commission encouraged the collaboration with Japan in 23 calls under WP2018-20 (Horizon 2020). The research collaboration is expected to increase.

Finally, the future agenda for collaboration is discussed.



Marlène Bartès

Policy Officer, DG for Education and Culture,
European Commission

Marlène Bartès joined the European Commission in 2013. She is part of the team responsible for international cooperation and programmes in the field of education and training, focusing on collaboration with countries outside the EU. Her geographical responsibilities include the Western Balkans and Asia. Before joining the Commission, Marlène worked for the Academic Cooperation Association (ACA) in Brussels, a dynamic think tank in the area of international cooperation in higher education. Her passion for international affairs started with her studies, which guided her from France to Japan and Canada.

EU-Japan Cooperation in Higher Education- Addressing Global Challenges, Together

Abstract:

Japan and the EU share similar objectives in the area of education – such as international cooperation, increasing access to higher education through scholarships, or strengthening science and technology – and are therefore natural partners for cooperation in education and research.

Since 2014, the EU opened up even more opportunities to Japan thanks to the new generation of EU programmes, namely Erasmus+ and Marie Skłodowska – Curie actions, which support the internationalisation of higher education systems, increase intercultural understanding and improve employability in a globalised and knowledge-based society. However, Japanese participation in EU education programmes has to date been rather modest. In her presentation, Marlène will outline current and future cooperation between the EU and Japan in the field of higher education, with a particular focus on Japanese participation in Erasmus+ and Marie Skłodowska-Curie actions and ways to improve it.

Helmut Staubmann

Dean, Faculty of Social and Political Sciences,
University of Innsbruck (Austria)



Helmut Staubmann is Professor for Social Theory and Cultural Sociology and Dean of the Faculty of Social and Political Sciences, University of Innsbruck. He was president of the Austrian Sociological Association. He held visiting researcher positions at UCLA, the University of Pennsylvania and Harvard University and taught at several European, Asian, and American universities. His research focuses on conceptual and methodological foundations of social sciences, the intersection between social theory and aesthetics and on issues of higher education and research.

Innovation in Higher Education and Research: Regional Culture and Global Challenges

Abstract:

There are two threads that make up the fabric of the situation to which institutions of higher education and research and professional organizations are required to react: one thread is the technological advancement that resulted in new research tools and communication technologies, and the other one is the rapidly increasing cooperation and exchange between scholars that finally reached the stage of a global university system.

In my presentation I will report about the developments of professional social science organizations in Austria and about a planned joint case study of Kobe University, the University of Innsbruck, and the Management Center Innsbruck on the specific transformations these three universities are undergoing and planning in the face of globalization processes.



Raf Vanderstraeten

Professor and Director, Centre for Social Theory,
Ghent University (Belgium)

Awarded PhD from Leuven University, Belgium, in 1994, and Habilitation from the University of Bielefeld, Germany in 2004. He is currently also affiliated with the Helsinki Collegium for Advanced Studies (Finland) and the Department of Sociology of the University of Chicago (USA). With Kaat Louckx, he recently published *Sociology in Belgium: A Sociological History* (Palgrave Macmillan, 2018).

The schooled society: the geography of education in Belgium, 1961-2011

Abstract:

The expansion of university-based education is linked with the rise of the contemporary 'knowledge society' or 'schooled society'. But as the expected amount of education has quickly spiraled upward, the 'dropout problem' for people who quit school at an early age was also created. Against this background, I will present an analysis of geographical inequalities at the top and the bottom end of the human capital distribution across Belgium in the period 1961-2011. In spite of the expansion of university education, the segregation of university trained human capital within Belgium and its regions (Flanders and Wallonia) remained high throughout this period. While the shares of adults without educational credentials clearly decreased in Belgium, this decrease goes hand in hand with growing divergences between the Flemish and the Walloon regions. Altogether, these findings clarify the ways our society is currently organizing itself on the basis of educationally gained knowledge. On the basis of these findings, this presentation will also show how the global rise of the 'knowledge society' is currently leading to new divergences between regional cultures.

Simon Kaner

Director, Centre for Japanese Studies, University of East Anglia (UK)



Dr. Simon Kaner is Director of the Centre for Japanese Studies at the University of East Anglia and Head of the Centre for Archaeology and Heritage at the Sainsbury Institute for the Study of Japanese Arts and Cultures. He is an archaeologist specialising in the prehistory of Japan and a Fellow of the Society of Antiquaries of London since 2005. His recent publications include *An Illustrated Companion to Japanese Archaeology* (edited, with Werner Steinhaus) (Oxford, Archaeopress, 2016) and he is currently editing the *Oxford Handbook of the Archaeology of Korea and Japan*. Simon is Research Fellow in the Japanese Section, Department of Asia, The British Museum, and Fellow of the McDonald Institute for Archaeological Research at the University of Cambridge. He is Co-Editor of the *Japanese Journal of Archaeology*, Series Editor for the Archaeopress series *Comparative Perspectives on Japanese Archaeology* and Series Co-Editor for the Springer series *The Science of the History of Humanity in Asia and the Pacific*.

A new approach to delivering Japanese studies: the case of the University of East Anglia

Abstract:

In this presentation I will introduce a series of initiatives through which the Sainsbury Institute for the Study of Japanese Arts and Cultures and the Centre for Japanese Studies at the University of East Anglia in the UK are developing innovative approaches to teaching, researching, and engaging local communities with, Japan. These include: Summer Schools in Japanese Studies and Japanese Arts, Cultures and Heritage; Widening Participation programmes encouraging more students to consider attending University, using Japan as an attraction; exhibitions about Japan; explicitly comparative research projects relating Japanese examples to local experiences; and the use of social media to foster new and further interest in Japan. We hope that these various initiatives will help create a resilient programme of interdisciplinary Japanese studies at the University of East Anglia that can withstand the headwinds facing the higher education sector in the UK generally.



Kiyomitsu Yui

Executive Advisor to the President, Kobe University (Japan)

Kiyomitsu Yui is Professor of Sociology in the Graduate School of Humanities, and Executive Adviser to the President in Charge of International Collaboration, and Executive Director, Centre for EU Academic Collaboration, at Kobe University. He has been a visiting scholar at Harvard University, and Asian Chair at Sciences Po. His main research subject is sociological theory from G.H. Mead via T. Parsons to U. Beck. He has also been interested in the process of modernization, second modernization, and popular culture in the comparative and global context. His publications include 'From 'This is Not a Pipe' to 'This is Not Fukushima' : Global Disaster and Visual Communication' , in *The Consequences of Global Disasters* (ed. by A. Elliott et.al., Routledge 2016) and 'Multiple Modernities and Japan: Nagai Kafū and H.G. Wells' , in *New Steps in Japanese Studies* (Ca' Foscari Japanese Studies Series 5, 2017).

Innovation of Higher Education and internationalization of Japanese Studies: the case of Kobe University

Abstract:

In the presentation I will explain and analyze the case of innovation of higher education at Kobe University, Japan, coping with the globalization of educational systems in the world. In the process of facing the global impact, the peculiarity of historical, cultural and societal settings of the educational system in each region has serious concern. The different responses towards the situation create points of difficulties for the global accordance and reconciliation to fit each other in the innovative process of higher education.

The higher educational institutes in the world have been challenged by the following different issues simultaneously: from traditional types of elite education towards more mass education, universal access by everyone yet at the same time pluralization of the system accessible by different people, and finally and most recently globalization, namely comparability and transferability of the units, symbolized by the term Bologna Process. One of the main social issues of our time in educational fields is how to sufficiently delineate all these issues and implement and express them in the institutional terms and actual educational programs. In the talk I will introduce some examples of the trials in Kobe such as joint research projects with the University of Innsbruck and especially Japanese Studies programs taught in English as cooperative academic activities with foreign universities in Europe and the world.



Patrick Vittet-Philippe **Discussant**

Advisor, Kobe University Brussels European Centre (Belgium)

Patrick Vittet-Philippe is a recently retired EC official, with a special interest in international S&T cooperation, science communication and science diplomacy. Before joining the EC, he taught at Trinity College Dublin and Merton College Oxford and was *attaché de recherche* at the French CNRS. He spent 14 years in the French Diplomatic Service, as cultural attaché in Tel Aviv, London and New York. After a time in the EU TV industry, he joined the EC as expert-adviser in Information Society technologies and digital economy, representing the institution in key international fora and conferences. He moved in 2001 to DG Research as Press and Communication Officer, responsible, in particular, for commissioning TV magazines on EU research (e.g. *Futuris* on Euronews). In 2011 he became Head of the Japan and Russia Desks, where he organized the 'EU-Russia Year of Science', and was directly involved in the preparation of EU-Russia and EU-Japan Summits. He was appointed last year as adviser to Kobe University European Centre in Brussels, focusing on the development of joint research projects and academic cooperation between Europe and Japan.





Session 2

10:00 - 13:30

Microorganisms in biotechnology

Topic 1: Informatics and Diversity

Chair **Ken-ichi Yoshida**
Kobe University (Japan)

Speakers **Michihiro Araki**
Kyoto University (Japan)
Stefan Weckx
Vrije Universiteit Brussel (Belgium)
Ro Osawa
Kobe University (Japan)

Topic 2: Metabolism and Regulation

Chair **Stefan Weckx**
Vrije Universiteit Brussel (Belgium)

Speakers **Eveline Peeters**
Vrije Universiteit Brussel (Belgium)
Tomohisa Hasunuma
Kobe University (Japan)
Jürgen Wendland
Vrije Universiteit Brussel (Belgium)

Discussant **Ken-ichi Yoshida**
Kobe University (Japan)

Session II was organised in a tight collaboration between Kobe University (KU) and Vrije Universiteit Brussel (VUB). Professor Ken-ichi Yoshida and Professor Stefan Weckx acted as the representative organisers and designed the session from scratch. After careful discussion, we came to the conclusion to focus on microorganisms in biotechnology as reflected in the session title. We decided to bring out three presenters from each side (six talks in total): three talks on Topic 1, Informatics and Diversity, and the other three on Topic 2, Metabolism and Regulation. The presenters discussed in person before the event to provide enough introduction and to avoid excess redundancy in the content.

Finally, the actual session was organized as listed: Topic 1, presented by Professor Araki Michihiro, Kyoto University, *Bioinformatics analyses for designing synthetic metabolic pathways*; Professor Stefan Weckx, VUB, *Genomics and metagenomics to investigate fermentation food ecosystems in view of starter culture selection*; and Professor Ro Osawa, KU, *Development and application of a single-batch fermentation system that simulates human intestinal microbiota*; and Topic 2, Metabolism and Regulation, by Professor Eveline Peeters, VUB, *Expanding synthetic biology to the extremes of life: engineering extremophilic microorganisms as novel cell factories*; Professor Tomohisa Hasunuma, KU, *Development of dynamic metabolomics and its application to metabolic engineering*; and Professor Jürgen Wendland, VUB, *The APSES protein Sok2 is a positive regulator of sporulation in *Ashbya gossypii**.

The presentations were followed by a general and open discussion amongst the organisers, the presenters, and the audience. Since this event was the first official contact between the biotechnology research groups from the two Universities, the most important point was getting to know each other in person and establishing mutual understanding. We confirmed existing activities in research and international exchanges on both sides, and discussed possibilities in designing cooperative research/exchange projects involving the other members who could not attend this particular event.

Session 2

Topic 1

Prof. Ken-ichi Yoshida Chair

Graduate School of Science, Technology and Innovation,
Kobe University (Japan)



After a Master obtained at Kyoto University in 1989, he got the position of Assistant professor at Fukuyama University in 1990 and obtained a PhD at Kyoto University in 1993. After a Post-Doc experience at INRA, France, from 1996 to 1997, he moved to Kobe University in 2004 as Associate Professor, and was promoted to Professor of Applied Microbiology in 2009. He has specialized in functional genomics of bacteria including *Bacillus subtilis* and its relatives since the very beginning of his career to date. He was once awarded the prize for "Encouragement of Young Scientists" (2002) and twice the prize for "Excellent papers" from the Japan Society for Bioscience, Biotechnology, and Agrochemistry (2008 and 2014). He served in the Research Promotion Bureau in the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan, as a Program Officer (Scientific Research Senior Specialist) (2005-2007). Since April 2014 he serves as the Executive Director of the Kobe University Brussels European Centre .



Michihiro Araki

Graduate School of Medicine, Kyoto University (Japan)

Professor in the Graduate School of Medicine, Kyoto University and Visiting Professor in the Graduate School of Science, Technology and Innovation, Kobe University. Awarded MS and PhD from Kyoto University in 1998 and 2001 respectively. After working for Boston University as a research assistant, joined the University of Tokyo, Kyoto University and Kobe University as an academic member in 2003, 2008 and 2013 respectively. His research focuses on Bioinformatics, Synthetic Biology and Clinical Informatics.

Bioinformatics analyses for designing synthetic metabolic pathways

Abstract:

The recent progress in synthetic biology has accelerated various modifications in cell processes, and in particular has enabled us to devise the metabolic pathways to produce various chemicals, including fuels, plastics, fibers, and pharmaceuticals. In order to produce useful chemicals with higher efficiency, a number of research projects have been conducted to design novel and/or artificial metabolic pathways, which requires urgent development in information analysis technology, namely bioinformatics.

We have developed an *in silico* technology to design metabolic pathways, and a design tool (software) has been devised. The main features of this tool are listed as follows: i) it can design possible metabolic pathways whatever the target chemical is intended to be produced, ii) the designed novel metabolic pathways can be evaluated for their efficiency in production of particular compound of interest, iii) this tool can extend the scope of metabolic networks including not only the previously known compounds and enzymes but also unknown ones, and iv) for some model organisms, the metabolism can be simulated in the genome-scale for quantitative analysis. Furthermore, the machine learning and sequence analysis technologies are now integrated to select appropriate enzyme genes from sequence databases for implementation of practical metabolic pathway designing.

Stefan Weckx

Research Group of Industrial Microbiology and Food Biotechnology (IMDO), Faculty of Sciences and Bioengineering Sciences, Vrije Universiteit Brussel (Belgium)



Prof. Dr. Stefan Weckx is a tenure track assistant professor on the theme “Genomics in food fermentation processes” at the Department of Bioengineering Sciences of the Faculty of Sciences and Bioengineering Sciences of Vrije Universiteit Brussel (VUB), Brussels, Belgium. He obtained a MSc. in Biochemistry in 1996 and a PhD in Sciences in 2004, both at the University of Antwerp, Belgium. As a PhD student, he stayed as a Marie-Curie training fellow at the European Bioinformatics Institute in Hinxton, Cambridge, UK. After obtaining his PhD, he joined the MicroArray Facility of VIB in Leuven, Belgium, as a postdoc. In 2006, he joined the Research Group of IMDO of VUB, headed by Prof. Dr. ir. Luc De Vuyst, as a postdoc to supervise the molecular (micro)biological research and to start up research on (meta)genomics and bioinformatics to investigate food fermentation processes. In 2014, he obtained a tenure track position as assistant professor.

Genomics and metagenomics to investigate fermentation food ecosystems in view of starter culture selection

Abstract:

Fermented foods harbour a rich diversity of microorganisms, including for instance lactic acid

bacteria, acetic acid bacteria, and yeasts. These microorganisms are involved in the production of specific metabolites that contribute to special characteristics of these foods, such as antimicrobial activity or organoleptic properties, as well as to competitiveness and ecosystem adaptation. Over the years, various spontaneous fermented foods and beverages have been studied to unravel their microbial ecosystem composition and metabolic behavior. These studies aimed at the identification of the microbial species involved in desired ecosystem functions and their possible use as functional starter cultures for controlled fermentation processes to guarantee specific characteristics of the fermented food products. Recent advances in next-generation sequencing techniques not only allow analyzing the genomes of functional starter culture strains, but also provide great opportunities to obtain a more in-depth insight into the species composition as well as the genetic potential of fermented food ecosystems.

In recent years, the research group IMDO sequenced diverse samples of various food fermentation processes (cocoa, coffee, water kefir, cheese and meat brines, etc.), whether or not obtained as a function of fermentation time, using an amplicon-based metagenetics and/or shotgun metagenomics approach, allowing taxonomic and both taxonomic and functional analysis, respectively. Also, the genomes of several of its potential functional starter cultures were sequenced. Overall, these approaches will help to understand fermented food ecosystem structures and functions, allow fermented food ecosystem reconstructions, and finally lead to a better supported selection of appropriate functional starter culture strains to perform well-controlled and/or steered food fermentation processes.



Ro Osawa

Graduate School of Agricultural Science, Kobe University (Japan)

Professor in the Graduate School of Agricultural Science, Kobe University, Japan. Graduated from the veterinary school of Hokkaido University, Japan. Awarded PhD (in veterinary medicine) from Queensland University, Australia in 1987 and another PhD (in agricultural science) from Tohoku University, Japan in 1992. After working for Lone Pine Koala Sanctuary in Australia as a research director between 1988 and 1992, Tokushima University as a research assistant between 1993 and 1995, and Kanagawa Prefectural Health Laboratories as a senior investigator between 1996 and 2000, he joined Kobe University as an academic member. His research focuses on food and intestinal microbiology.

Development and application of a single-batch fermentation system that simulates human intestinal microbiota

Abstract:

In order to study intestinal microbiota and its application for promoting human health, we have devised the

“Kobe University Human Intestinal Microbiota Model” (KUHIMM), based on the single-batch fermentation system, which allows us to simulate human intestinal microbiota both metagenomically and metabolically. KUHIMM is capable of evaluating 1) practical functionality of various food components, 2) health status of human subjects, and 3) some gene expression of certain bacterial strain *in vivo*. Some technically important aspects and features of the model and its application will be described in the talk.

Topic 2

Stefan Weckx Chair

Research Group of Industrial Microbiology and Food Biotechnology (IMDO), Faculty of Sciences and Bioengineering Sciences, Vrije Universiteit Brussel (Belgium)



Eveline Peeters

Research Group of Microbiology, Faculty of Sciences and Bioengineering Sciences, Vrije Universiteit Brussel (Belgium)



Assistant Professor in the Department of Bioengineering Sciences, Vrije Universiteit Brussel (VUB), Belgium. Awarded MSc and PhD in bioengineering sciences at VUB in 2002 and 2007, respectively. My research focuses on microbial gene regulation and synthetic biology.

Expanding synthetic biology to the extremes of life: engineering extremophilic microorganisms as novel cell factories

Abstract:

Microbial production of chemicals from renewable biomass is a promising alternative for the (petro-)chemical industry and contributes to a more sustainable bio-economy. Metabolic engineering approaches, thereby adjusting fluxes in the host metabolism through genetic engineering, enables the construction of strains with higher yields. Recently, scientists are complementing this approach by introducing orthogonal genetic circuits in a bottom-up fashion enabling the engineering of complex functions, such as product synthesis with fine-tuned multi-gene pathway under biosensing control. Biosensing capabilities also enable high-throughput screening of a large number of combinatorially engineered strains for production. Thus far, most synthetic biology tools and applications have been developed for the commonly used host organisms such as *Saccharomyces cerevisiae* and *Escherichia coli*, while the orthogonality and modularity of synthetic biology engineering (“plug-and-play”) opens

up possibilities to expand towards novel microbial hosts for which a more limited amount of biological knowledge is available but for which the growing conditions are more compatible with the envisaged bioprocess. In this context, extremophilic microorganisms are interesting hosts as they are more likely to withstand harsh manufacturing conditions (e.g. pretreatment of the feedstock or downstream processing) enabling the development of more cost-efficient consolidated bioprocesses. Research in my group focuses on the translation towards non-traditionally used extremophilic hosts, more specifically archaea such as thermoacidophilic *Sulfolobus acidocaldarius* growing optimally at pH 2-3 and 75 °C. This translation brings about several challenges: i) a characterized synthetic biology toolbox composed of, for example, gene expression element libraries and a reporter tool, is unavailable for *archaea* and ii) all components to be transferred need to possess an inherent thermostability. Our work addresses these challenges and aims to successfully introduce a synthetic thermostable metabolic pathway under appropriate gene expression control as a first proof-of-principle demonstration of the use of *S. acidocaldarius* as a production host.



Tomohisa Hasunuma

Graduate School of Science, Technology and Innovation,
Kobe University (Japan)

Professor in the Graduate School of Science, Technology and Innovation, Kobe University, Japan. Awarded Ph.D. from Osaka University in 2004. After working for Research Institute of Innovative Technology for the Earth (RITE) as a researcher for 4 years, he joined Kobe University as an academic member. His research has focused on metabolic analysis and engineering of microorganisms and microalgae based on multi-omics analysis. His current research interest is the Design-Build-Test-Learn (DBTL)-based development of recombinant microorganisms for functional-compounds production through the consolidation of biotechnology and information technology. He has published more than 110 papers and 5 book chapters in international journals and publications, and filed more than 35 patents. He was awarded the Fermentation and Metabolism Research Prize of Japan Bioindustry Association in 2013 and the Biotechnology Encouragement Prize of Biotechnology Society of Japan in 2014.

Development of dynamic metabolomics and its application to metabolic engineering

Abstract:

The *in vivo* labeling technology with stable isotopic compounds enabled metabolic analysis to comprehend the turnover of metabolites (this newly developed technology is called "dynamic metabolomics"). Dynamic metabolomics makes it possible to measure not only the accumulation amount of metabolites but also the rates in the synthesis/degradation of metabolites. Conventionally, metabolic flux analysis (MFA) has been used as the established method for metabolic analysis, whose principle depends on flux prediction based on mass balance, however the prediction often does not fit the reality. On the other hand, dynamic metabolomics has a superior technical advantage over

MFA, since it depends on actual measurement of the turnover of metabolites. Recently, dynamic metabolomics allowed us to identify the distribution of carbon atoms incorporated into cells as well as the bottlenecks in metabolic pathways. In addition, based on the results, metabolic pathways were successfully engineered to improve productivity of some bio-based chemical products.

Jürgen Wendland

Research Group of Microbiology, Faculty of Sciences and
Bioengineering Sciences, Vrije Universiteit Brussel (Belgium)



- 2016 -: Professor of Microbiology, Vrije Universiteit Brussel, Belgium
- 2006 - 2016: Professor of Yeast Genetics and Yeast Biology & Fermentation Carlsberg Laboratory, Copenhagen, Denmark
- 2000 - 2006: Friedrich-Schiller University and Leibniz-Institute for Natural Product Research and Infection Biology - Hans-Knöll-Institute, Jena, Germany
Group leader: Junior Research Group "Fungal Pathogens"
- 1996 - 1999: Biozentrum, University Basel, Switzerland; Postdoc at the Dept. of Applied Microbiology
- 1993 - 1996: Philipps-University, Marburg, Germany, PhD in Fungal Genetics
- 1987 - 1993: Justus-Liebig University, Giessen, Germany; Diploma studies in Biology

The APSES protein SOK2 is a positive regulator of sporulation in Ashbya gossypii

Abstract.

Ashbya gossypii is a homothallic, flavinogenic, filamentous ascomycete, which starts overproduction of riboflavin and sporulation at the end of the growth phase. Mating is not required for sporulation and the standard homothallic laboratory strain is a *MAT α* strain. Here we show that ectopic expression of *MAT α 2* in *Ashbya* completely suppresses sporulation and inhibits riboflavin overproduction. A large set of sporulation specific genes was downregulated by *MAT α 2*. Additionally, we found *SOK2*, but not *Msn2*, was more than 10x downregulated in this strain. Deletion of *SOK2* strongly reduces riboflavin production and prohibits sporulation in *Ashbya*. Promoter truncation analyses defined the *IME1* promoter and *lacZ* reporter gene assays showed that *IME1* transcription is not controlled by *SOK2*. However, global transcriptome analysis identified *IME2* and *NDT80* as potential targets of *SOK2*. This suggests that sporulation in *Ashbya* may still be under mating type locus control and is mainly controlled by nutritional signals via the cAMP-dependent PKA-pathway with *SOK2* as a central positive regulator. This contrasts the situation in *Saccharomyces cerevisiae* where *Sok2* is a repressor of *IME1* transcription. Additionally, we provide evidence that sporulation and riboflavin overproduction in *Ashbya* are interconnected at the level of transcription via *MAT α 2* and *SOK2*.

Ken-ichi Yoshida **Discussant**

Graduate School of Science, Technology and Innovation,
Kobe University (Japan)





Session 3

14:30 - 18:00

Migration and Community Building

Co-Chairs

Kazunari Sakai

Kobe University (Japan)

Kaoru Aoyama

Kobe University (Japan)

Speakers

Raffaella Greco Tonegutti

DG Research and Innovation
European Commission

Sachi Takaya

Osaka University (Japan)

Joanna Guzik

Jagiellonian University (Poland)

Shinnosuke Takahashi

Kobe University (Japan)

Sonja Snacken

Vrije Universiteit Brussel (Belgium)

Discussant

Christian Kaunert

Vrije Universiteit Brussel (Belgium)

Session 3

Kazunari Sakai Co-Chair

Graduate School of Intercultural Studies, Kobe University (Japan)



Professor in the Graduate School of Intercultural Studies and Vice Director at the Center for International Education, Kobe University, Japan. Awarded MA from Tokyo University of Foreign Studies in 1994 and PhD from Kobe University in 2007. After working for the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan and Tokyo Institute of Technology, he joined Kobe University as an academic member. He stayed as an invited professor at Sciences Po, Université Paris Nanterre and Université Panthéon-Assas Paris II. His research focuses on the EU's external relations with neighbouring countries, migration issues across the Mediterranean Sea, and global governance related to migration.



Kaoru Aoyama Co-Chair

Graduate School of Intercultural Studies, Kobe University (Japan)

Kaoru Aoyama, Ph.D. (2005, University of Essex), is a theoretically informed empirical sociologist. She currently focuses on gendered work in migration including care work and sex work and on trafficking, transformation of the intimate sphere and participatory action research. Her publications include 'The Sex Industry in Japan: the Invisible Danger of Public Morals', in *The Routledge Handbook of Sexuality Studies in East Asia* (Mackie and McLelland eds., Routledge, 2015), *Asian Women and Intimate Work* (ed. with Ochiai, Brill, 2014; chosen as an Outstanding Academic Title by the CHOICE Award 2014), and *Thai Migrant Sex Workers: From Modernisation to Globalisation* (Palgrave/Macmillan, 2009).

Raffaella Greco Tonegutti

Directorate-General for Research and Innovation,
European Commission



Raffaella Greco Tonegutti is a migration and asylum policy officer at DG Research and Innovation, European Commission. She holds a PhD in fundamental rights (University of Pisa, Italy), with specialization in migration studies, and a MA in International Cooperation and Human Rights. Over the last 15 years, Raffaella worked as a migration, asylum and development expert for the EU (HQ and Delegations), the International Organization for Migration (IOM), the International Centre for Migration Policy Development (ICMPD), the United Nations Organization for Drugs and Crime (UNODC), and other organizations.

EU research agenda on migration

Abstract:

She will present the WP 2018-2020 of H2020. The focus will be on:

- Global and European governance of migration as well as innovative solutions for integration of migrants into European host societies.
- International cooperation, as well as a better understanding and awareness of the role of international development and regional policies.
- International protection of refugees, the management of forced displacement, and the promotion of more fact-based and accurate discourses on migration.
- Effects of migration on social systems, the access to and impact on labour markets and the cultural integration of third country nationals.
- Factual information on migration and the regulation of migration of third country nationals, also by involving migrants and their individual experiences in the shaping of narratives.



Sachi Takaya

Graduate School of Human Sciences, Osaka University (Japan)

Associate Professor in the Graduate School of Human Sciences, Osaka University. Received PhD from Kyoto University, Japan in 2010. After a JSPS postdoctoral research fellowship and working at Okayama University as an associate professor, she joined Osaka University as an academic member in 2016. Her research focuses on migration, especially irregular migration and female migration in Japan.

Why hasn't Japan established migration policy?

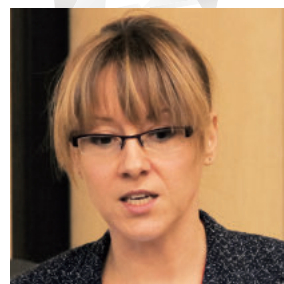
Abstract:

This presentation explores why Japan has not established migration policy for several decades by focusing on the politics of migration within parliamentary politics as well as civil society. Although the number of foreign residents in Japan has been increasing and is over 2.4 million in 2017, the Japanese government will not establish the official migration policy. Therefore, despite the fact of the unofficial "acceptance" of migration, the image that Japan is not an immigration country is still pervasive.

To explore the reason for the long-term absence of the policy, this presentation examines the attitudes of political parties and civil society toward "acceptance" of migration by referring to J. Hollifield's arguments on migration policy (Hollifield 1992, 2004). Hollifield demonstrates that the logics of liberalism, or economic, political, and juridical logics, shape migration policies in contradictory ways. The presentation analyzes how the opinions based on these logics conflict within parties and civil society. Then, it discusses that these splitting opinions prevent parties and civil society from proposing the establishment of migration policy, which keeps the unofficial routes to migration. The presentation concludes that the split opinions along with the existence of the unofficial routes hinder the establishment of the official policy.

Joanna Marta Guzik

Institute of Middle and Far East Studies,
Jagiellonian University (Poland)



Assistant Professor, Institute of Middle and Far East Studies, Jagiellonian University in Krakow, Poland. Awarded MA and PhD from Jagiellonian University in 2004 and 2010, respectively. Since 2006 she has been working in the Institute of Middle and Far East Studies, Jagiellonian University as a Lecturer and since 2011 as an Assistant Professor.

In 2013 she received a special award from the Rector of Jagiellonian University for her publication in Polish "Japan's policy towards Jewish issue 1932-1945". Her research focuses on contemporary Japanese society, Japanese social policy, Japanese minority policy, history of Japan, Korea – Japan relations, EU and V4 migration policy.

Polish government migrant policy since 2015: issues to be solved

Abstract:

The presentation aims to show the migration policy of Szydło's government which stands in contradiction to the EU position on the migrant crisis. The Polish government, supported by public opinion, expresses a veto on the relocation plan for migrants from Italy and Greece, however at the same time it allows Ukrainians and other ethnicities to come to Poland.

During the presentation we will show Polish government representatives and member's speeches on the issue year by year since 2015 and pro-government media rhetoric, also in the context of growing "silent" acceptance of the ruling party's anti-foreign public speaking and acts.



Shinnosuke Takahashi

Faculty of Global Human Sciences, Kobe University (Japan)

Assistant Professor, Faculty of Global Human Sciences since April 2017. Takahashi received his doctoral degree from the Australian National University in December 2016 with his dissertation on the nexus between social cohesion and identities involved in the anti-US base activist communities in Okinawa. Through ethnography, interviews, and archival works, his research highlights the so-called "non-Okinawan" and a significant number of "non-Japanese" activists to examine, and reflect critically, the discourses and practices that divide and connect the local protest community. Takahashi is an editor and author of *Transnational Japan as History: Empire, Migration and Social Movements* (Palgrave Macmillan, 2016).

Becoming Local, Connecting Places: Trans-local Lives of Anti-Base Activists in Okinawa

Abstract:

While we witness an ever-increasing number of scholarships on transnational social movements, particularly in the fields of political sciences and sociology, only rarely examined is how a local civic activism grows to become a movement overarching the multi-national boundaries. The usefulness of socio-historical inquiries is that it not only unravels the local origins of the transnational movements but also affirms the importance of the heterogenous nature of a local community upon which a form of transnationalism is created. In this light, the 70 year-long tradition of anti-US base struggle in Japan's southernmost prefecture, Okinawa, is a great laboratory to examine the historical process by which the local activism became a node of transnational anti-base networks in Asia and the Pacific. This presentation explores the details of some key activists who started a movement called "Okinawa-Korea People's Solidarity", a group founded in the late 1980s with the aim of internationalising Okinawa's protest movement. The life histories of respective activists from different places in Japan compels us to take into account "non-Okinawan" as an agent to create grass-roots regionalism in Asia and the multidimensionality of the Okinawan local protest culture and identity.

Sonja Snacken

Vice-Rector, Vrije Universiteit Brussel (Belgium)



Sonja Snacken is Professor of Criminology, Penology and Sociology of Law. Her research focuses on (comparative) penalty and different forms of (extreme) institutional dependency. She has been involved in over 40 (inter)national research projects, with a special emphasis on the integration of an empirical social scientist and human rights approach. She was Research Fellow at the Straus Institute for the Advanced Study of Law and Justice, New York University School of Law (2010-2011) and is *Collaborateur-membre* of the Centre International de Criminologie Comparée, Université de Montréal (since 2010). She was awarded the Belgian Francqui Chair at the Université Catholique de Louvain (2008-2009), the Ernest-John Solvay Prize for Scientific Excellence in the Human and Social Sciences by the National Science Foundation (FWO, 2010) and the 2015 European Criminology Award by the European Society of Criminology.

Crimmigration. Foreign National Prisoners between criminal law and immigration law – A European Perspective

Abstract:

Foreign National Prisoners (FNP) represent an increasing characteristic of many, especially Western, European prison populations. International and European human rights standards emphasize the importance of reintegration of prisoners into society upon release as a fundamental aim of imprisonment. On the other hand, following Stumpf (2006), scholars describe the phenomenon of “crimmigration” as the merger of criminal law and immigration law in both substance and procedure. This paper considers the effects of “crimmigration” in Europe on the principle of reintegration as a fundamental human right for prisoners.



Christian Kaunert **Discussant**

Academic Director, Institute for European Studies,
Vrije Universiteit Brussel (Belgium)

Prof. Dr. Christian Kaunert is Academic Director and Full Professor of European Politics at the Institute for European Studies, Vrije Universiteit Brussel. Previously, he served as a Full Professor of International Politics, Head of Discipline in Politics, University of Dundee and Director, European Institute for Security and Justice, Jean Monnet Centre for Excellence, University of Dundee. He was previously Marie Curie Senior Research Fellow at the European University Institute Florence, and Senior Lecturer in EU Politics & International Relations, University of Salford. Prof. Kaunert holds a PhD in International Politics & an MSc in European Politics from the University of Wales Aberystwyth, a BA (Hons) European Business from Dublin City University, ESB Reutlingen and a BA (Hons) Open University. His research has a clear focus on the Global Security role of the EU, especially in the area of EU Justice and Home Affairs.





Session 4

14:30 - 18:00

Healthy and Active Ageing: a Key Role for Physical Exercise

Chair

Ivan Bautmans

Vrije Universiteit Brussel (Belgium)

Speakers

Jürgen Bauer

Heidelberg University (Germany)

Evelien Van Roie

KU Leuven (Belgium)

Hisatomo Kowa

Kobe University (Japan)

Rei Ono

Kobe University (Japan)

Discussant

Ingo Beyer

VUB Universitair

Ziekenhuis Brussel (Belgium)

Session IV was organised in a tight collaboration between Heidelberg University, KU Leuven, Kobe University (KU) and Vrije Universiteit Brussel (VUB). A total of five speakers acted as the representative organisers and designed the session from scratch.

Dr Jürgen M. Bauer gave a presentation about sarcopenia, which is the loss of muscle mass and/or physical functions. Sarcopenia is a current topic in the geriatrics area and the operational definition for it has been proposed. He introduced many kinds of definition and proposed future problems.

Dr. Evelien Van Roie and Dr. Ivan Bautmans gave a presentation about resistance exercise in order to counter muscle weakness in the elderly. Resistance exercise is the most effective approach to counteract sarcopenia. Relatively high load resistance exercises were recommended for improving sarcopenia. The high load exercises were, however, difficult to do for the elderly. The speakers presented and proposed new resistance exercises including not only high load but also low load exercises for muscle mass, strength and functional performance.

Dr. Hisatomo Kowa gave a presentation about exercises to prevent dementia. The number of people with some form of dementia is increasing in the world, especially in Japan. The most reliable method for preventing dementia is exercise. Since the exercises to prevent dementia are more effective if provided earlier, he introduced community-based models and policy options for Kobe Municipality and the national government in order to detect risk people for dementia and to start the intervention before cognitive decline starts.

Dr. Rei Ono gave a presentation about the effect of exercise and activity on various frail elderly, which is recognized as a biologic syndrome associated with multisystem declines in physiologic reserve and increased vulnerability to stressors. He introduced the effect of exercise and activity on various frail elderly from previous reviews and his intervention study.

The presentations were followed by a general and open discussion amongst the organisers, the presenters and the audience. After an enthusiastic discussion, we came to the conclusion that physical exercise should play an important role in preventing sarcopenia, dementia and frailty as suggested in the session title. Since both the EU and Japan have a similar situation related to ageing, this meeting was meaningful from the viewpoints of sharing the information and future collaborations. We expect to conduct a collaborative study of this area in the near future.

Session 4

Ivan Bautmans Chair

Head, Gerontology and Frailty in Ageing research departments,
Vrije Universiteit Brussels (Belgium)



Ivan Bautmans is full-time tenured professor at the Vrije Universiteit Brussel (VUB) where he is head of the Gerontology and Frailty in Ageing research (www.vub.ac.be/FRIA) departments. Ivan Bautmans (PhD Medical Sciences, MSc Physiotherapy, MSc Manual Therapy) is an expert in Bio-Gerontological research: physical training of older persons, sarcopenia and inflammation.

Exercise to counter Inflamm-aging



Jürgen M. Bauer

Geriatric Center, Heidelberg University (Germany)

In 2016 Jürgen M. Bauer took over the chair for geriatric medicine at the Ruprecht Karls University of Heidelberg, Germany. He is also the director of the Agaplesion Bethanien Hospital Heidelberg. In 2010 he was appointed director of the Centre for Geriatric Medicine Oldenburg, Germany. Between 2004 and 2010 he worked as assistant medical director at the Department of Geriatric Medicine at the University of Erlangen-Nuremberg, Germany. In 2010 he was honored to become a member of the ESPEN faculty. He is also a member of the committee of scientific advisors of the International Osteoporosis Foundation (IOF). From 2007 until 2015 he was a member of the executive board of the European Union Geriatric Medicine Society (EUGMS) and he will be the congress president of the EUGMS Congress 2018, which will be held in Berlin. Jürgen M. Bauer serves currently as the president of the German Society for Geriatric Medicine (DGG). In 2007 he was awarded the honorary prize of the German Geriatric Society. Since 2015 Jürgen M. Bauer has been working as a co-editor of *Clinical Nutrition* and since 2016 as a section editor of *Current Opinion in Clinical Nutrition and Metabolic Care*. In recent years, Jürgen M. Bauer's research interest has focused on nutrition and its relationship with functionality in older persons.

Sarcopenia: Current definitions and challenges

Evelien Van Roie

Department of Movement Sciences, KU Leuven (Belgium)



Evelien Van Roie graduated with an MSc in Movement Sciences from KU Leuven (Belgium) in 2008. In 2014, she obtained her PhD with joint degree (KU Leuven – Vrije Universiteit Brussel) under the supervision of Prof. Christophe Delecluse and Prof. Ivan Bautmans. Evelien is currently employed as postdoc researcher at the Department of Movement Sciences, KU Leuven. Her research focuses on age-related declines in muscle function and (resistance) exercise interventions to counteract these declines.

Resistance exercise to counter muscle weakness in the aged: does the intensity matter?

Abstract:

Resistance exercise (RE) is the most effective approach to counteract sarcopenia. International guidelines have recommended RE at relatively high loads (60%-80% of the one repetition maximum (1RM)). Recently, the question has arisen whether muscle strength and mass gains would also be achievable with lighter loads.

The aim of this presentation is to provide an up-to-date summary of the current literature on high- and low-load RE and its effects on muscle mass, strength and functional performance in older adults. A randomized controlled trial of 12-week lower limb training at either HIGH load ($2 \times 10-15$ repetitions at 80% of 1RM), LOW load ($1 \times 80-100$ repetitions at 20% of 1RM), or LOW+ load (1×60 repetitions at 20% of 1RM, followed by $1 \times 10-20$ repetitions at 40% of 1RM) will be discussed in detail. Conclusions support that high- and low-load RE ending with volitional fatigue may be similarly effective for hypertrophy, strength gains and functional improvements in older adults ($\sigma 26$, $\text{♀} 30$, age = 68 ± 5 yrs). Differences that occur are very specific to the trained movement. The study points out that it is time to re-think the high-load RE philosophy in older adults.



Hisatomo Kowa

Graduate School of Health Sciences, Kobe University (Japan)

Dr. Kowa graduated from the Faculty of Medicine, University of Tokyo in 1995 and earned an MD. He engaged in neuropathological studies on Alzheimer's disease in the Graduate School of Medicine at the University of Tokyo and earned his PhD in 2004. He worked for Massachusetts General Hospital for

three years. He worked for the University of Tokyo Hospital from 2008 to 2010, then moved to Kobe University Hospital. He became an associate professor of Neurology in 2012, and was promoted to professor this year. He is currently interested in the prevention of dementia by community-based intervention.

Japanese Medical and Social System for Early Intervention of Patients with Cognitive Decline

Abstract:

There has been a significant increase in the numbers of people with some form of dementia worldwide as well as in Japan. Under this situation, disease modifying therapy for dementia is vital; however, many candidates have failed to show their efficiency, suggesting to us that our realistic strategy is to prevent AD or to slow its progression from MCI to AD.

The most reliable method for preventing dementia is exercise. In Japan, a combinational intervention including aerobic exercise and cognitive training called “Cognisize” has been established and is widespread. We have two types of insurance systems for caring for older people. One is the healthcare insurance system and the other is long-term care insurance system. “Cognisize” is available in many facilities based on the latter insurance system.

In order to realize the earlier and community-based identification system of cognitive decline, Kobe University and WHO Kobe Centre have just started a three year project with support from Kobe City to conduct an analysis of health data of approximately 80,000 Kobe citizens in their 70s. This study will inform community based models and policy options for Kobe Municipality and the national government to detect and to start intervention before cognitive decline starts.

Rei Ono

Graduate School of Health Sciences, Kobe University (Japan)



Associated Professor at the Graduate School of Health Sciences, Kobe University, Awarded MPH from the Graduate School of Medicine, Kyoto University, Japan, and PhD from the Graduate School of Medicine, Kyoto University, Japan in 2006 and 2012, respectively.

After working for Tohoku University Hospital as a Physical Therapist, joined Kobe University as an academic member.

His research focuses on clinical epidemiology, geriatric medicine, and geriatric oncology.

Effect of exercise and activity on various frail elderly from epidemiological studies

Abstract:

Japan has become the most aged society in the world. There is therefore a growing interest in prevention of disease as well as curing disease. Frailty is recognized as a biologic syndrome associated with multisystem declines in physiologic reserve and increased vulnerability to stressors, which results in increased risk of adverse outcomes, including disability, hospitalization, and death. Recently, frailty is considered a complex, multidimensional, and reversible state, and its concept is proposed to include not only the physical domain, but also cognitive and social domains (cognitive frailty and social frailty). The frail elderly should be screened as soon as possible and be treated properly by medical staff and/or community. The key non-pharmacological method to prevent frailty is to perform exercise and to keep active to counteract the various types of frailty, such as physical, cognitive, and social. I am going to present the effect of exercise and activity on various frail elderly from previous reviews and our intervention study.



Ingo Beyer **Discussant**

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