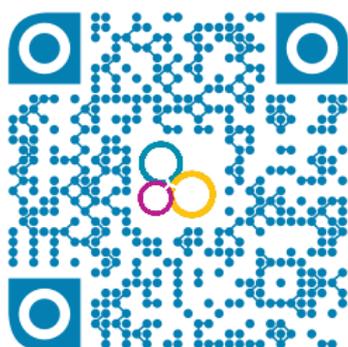


# EURAXESS Japan Quarterly Newsletter Issue 16 Q4 2019



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### Happy new year greetings!

As the EURAXESS Japan representative, these will be my last greetings to the EURAXESS Japan community. I would like to express my gratitude to the European Commission for setting up such an interesting, and vital initiative to improve the links between Japan and Europe, to the German Project Agency DLR for the huge effort put in supporting us along the years and remotely managing the project, to all the partners in Japan: the EU Delegation and the MS-AC embassies, funding agencies and RPO representation offices, the associations of European researchers in Japan on one side; and of course all the Japanese research organisations, universities, funding agencies, NPOs/NGOs who collaborated with EURAXESS Japan!

Last but not least, a big thank you to all of YOU, members of the EURAXESS Japan community, which has grown almost 400% since I took office in 2014, for your everlasting support, interest and participation in bringing up the EU-Japan collaboration and researcher exchanges!

I hope I can stay connected with as many of you as possible, and I invite you to connect with me on LinkedIn to stay in touch: [linkedin.com/in/matthieu-py](https://www.linkedin.com/in/matthieu-py)

EURAXESS –  
Researchers in Motion  
is an initiative of the European  
Research Area (ERA) that  
addresses barriers to the  
mobility of researchers and  
seeks to enhance their career  
development.

This pan-European effort is  
currently supported by over 40  
countries, of which we will  
profile one in each of our  
quarterly EURAXESS Japan  
newsletters. In this edition, we  
will zoom in on Israel



# EURAXESS Members in Focus: Israel

## Introduction

Israel is a country in Western Asia, located on the south-eastern shore of the Mediterranean Sea and the northern shore of the Red Sea. The country contains within its relatively small area. Israel's economic and technological centre is Tel Aviv, while its seat of government and capital is Jerusalem. The State of Israel currently has a population of approximately 9.1 million inhabitants.

Due to its immigrant nature, Israel is one of the most multicultural and multilingual societies in the world. Hebrew is the official language of the country, and Arabic is given special status, while English and Russian are the two most widely spoken non-official languages. A certain degree of English is widely spoken and is the language of choice for many Israeli businesses. Today Israel is an industrialized country with most of its manufacturing, including many traditional fields, based on intensive and sophisticated research & development and hi-tech processes, tools, and machinery. This is the outcome of very rapid and intensive development.

Hi-tech companies in areas ranging from software to biotechnology and cyber-security are a major driver of growth in the country's economy. Many leading international technology firms have opened research and development centres in Israel. In the last few years, out of the members of the OECD, Israel has spent the highest percentage of its GDP towards R&D, and in 2019 was ranked the world's fifth most innovative country by the Bloomberg Innovation Index.

Israel has a long tradition of academic excellence, boasting world class universities, colleges and research institutions. Israeli higher education institutions provide a diversity of academic programs in English for international students at the Bachelor and Master's degree level ranging from short-term courses to full degree programs. Israeli Institutions also welcome international students and researchers for PhD and Post-Doctoral research who collaborate with leading researchers in their fields.



Country size: 22.072 sq.km

Population: 8,798,000 (2018);  
9,092,000 (2019)

Language: Hebrew, Arabic

Capital: Jerusalem

Median Age: 30.2

Currency: New Israeli Shekel

Economy:

GDP Per Capita: 40.270,25  
USD (2017)

Unemployment rate: 3.7%  
(2019)

All based on:

[https://www.cbs.gov.il/he/publications/DocLib/isr\\_in\\_n/isr\\_in\\_n18e.pdf](https://www.cbs.gov.il/he/publications/DocLib/isr_in_n/isr_in_n18e.pdf)



EURAXESS – Researchers in Motion is an initiative of the European Research Area (ERA) that addresses barriers to the mobility of researchers and seeks to enhance their career development.

This pan-European effort is currently supported by over 40 countries, of which we will profile one in each of our quarterly EURAXESS India newsletters. In the December 2019 edition, we zoomed in on Israel.

**READ OUR EURAXESS countries in FOCUS:**

This country briefing was created by [EURAXESS BHO Israel](#). Focuses on other EU countries are available [here](#).

## Facts and Figures

### Universities in Israel

Education is highly valued within the national culture of Israel, and its higher education sector has been praised for helping to encourage the country's economic development and recent technological boom. The high quality of Israel's higher education system was also recognized in the QS Higher Education System Strength Rankings, published for the first time in 2016, in which it ranks as the world's 28th strongest national system.

Israel has 62 institutions for higher education (recognised by the Council for Higher Education), comprised of universities and other higher education institutions, both private and government funded. These institutions teach 262,591 students for all academic degrees.

There are nine universities in Israel, as well as many higher education colleges; the main difference is that the universities offer degrees all the way up to the doctorate level. Courses are often taught in Hebrew, but many leading Israeli universities also offer English-taught programs. Six of Israel's nine universities were featured in the QS World University Rankings® 2018.

Israel is especially recognised for research in the fields of:

- **Science and Engineering:** Israel is a world leader in science and engineering. Israeli scientists have won 4 Nobel Prizes in chemistry, 3 Turing Awards (computer science) and 1 Fields Medal (mathematics). Israel ranks 7th globally in the number of citations per scientific publication and is particularly strong in fields such as computer science, engineering, chemistry, and life sciences.
- **Innovation and Entrepreneurship:** Leading companies from around the world chose to open R&D centres in Israel and some programs include opportunities to undertake internships in top companies from around the world, giving students the opportunity to 'advance your career' development.
- **Agriculture and Sustainability:** Israel's challenging environment and lack of natural resources has led it to become a kind of agricultural "incubator" of ideas, developing new kinds of plants as well as revolutionary agricultural technologies. Drip irrigation technology is one famous example of Israel's success in this field.
- **Art, Design & Music:** Areas of study include a range of arts-related fields including fine arts, fashion and jewellery, photography, industrial and urban design, and traditional and contemporary music. Many programs offer innovative and multidisciplinary elements, allowing you to develop your own particular interests.
- **Israel and Mideastern studies:** Higher education institutions in Israel offer a range of programs from ancient to contemporary studies of Israel and Middle Eastern states, to Hebrew and Arabic language. Israel offers an



unparalleled opportunity to acquire an in-depth understanding of its and the region's political, social and economic dimensions

- **Jewish studies:** Studying in Israel gives students the opportunity to work with leading scholars in this field and to immerse themselves in both ancient and contemporary Judaism.

### Innovation and Excellence

For those interested in innovation and technology, Israel is the place for you! Israel is the land of innovation, also known as the “Start-Up Nation”. It is a hotbed of hi-tech activity, with the world’s highest investment per capita in start-up companies. Israel was ranked the 3rd most innovative country in the world (World Economic Forum Global Competitive Index). Studying in Israel gives you the opportunity to experience and participate in Israel’s vibrant start-up culture and eco-system.

Israel's Technion Institute of Technology has been rated no. 77 in the Shanghai Academic Rating of World Universities (2018), and The Hebrew University of Jerusalem in 95th place (2018).

**Patents:** Israel has seen a steady rise in patent applications over the years. Between 2014 to 2018 the number of applications has risen by 17.37% to 7,363 patent applications in 2018.

Learn more about Study and Research in Israel: <http://studyinIsrael.chc.org.il/>

### Funding Opportunities

Israel supports its R&D through many grants and scholarships; in 2018, the Ministry of Science and Technology signed 356 new engagement agreements to fund research, scholarships and Scientific Knowledge centres that include a program for Scientific Infrastructure Development and a program for Applied Engineering Research. In 2018 the total budget allocated for research, scholarships and knowledge centres was 147 million NIS. [Applying to study in Israel only takes 3 Steps](#): 1) Search for a program; 2) Complete the forms; 3) Get a visa. Israeli higher education [tuition fees](#) are competitive on an international scale and tuition fees for PhD degrees are generally waived by the host institution.

Bilateral and international cooperation: As of 2019 Israel has 38 ongoing bilateral agreements with 29 countries all around the globe. Today there are significant collaborations through bilateral and multilateral agreements between institutions and organizations that include joint research funds, projects, exchange of researchers and faculty, and more. Israel's key collaborations today include: US-Israel Binational Science Foundation (BSF), German-Israeli Foundation for Scientific Research and Development (GIF), Israel-China

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Research Foundation (ISF-NSFC), Israel-India Research Foundation (ISF-UGC), and Israel-Singapore Research Foundation (ISF-NRF). Promoting Israel's international research relations is one of the key objectives in transforming Israel's higher education system to a high quality and competitive international level. The Israeli Ministry of Science and Technology helps organize and fund International Conferences, Bi-national conferences, Young Scientists Schools, the COST program, and offers assistance with international conferences in Israel. Israel is also an active member in several international organizations and programs such as CERN, Horizon 2020, EMBL, EMBC, GSF, SESAME, ICDP and more.

In the academic year of 2019-2020 the Ministry of Foreign Affairs in Israel has funded scholarships for foreign students following cultural agreements, and special scholarship arrangements. [The PBC Fellowship Program for Outstanding Chinese and Indian Post-doctoral Fellows– 2020/2021](#) is one of the specific programs of the Israel Council of Higher Education (CHE). A scientific and technological collaboration agreement between the science ministries of India and Israel was signed in 1993; and since that time, more than 60 research studies have been conducted in a variety of fields: agricultural biotechnology, medical biotechnology, nanotechnology, advanced materials, electro-optics and lasers. The collaboration is conducted by publishing joint calls for proposals. In recent years, joint studies have been conducted in the fields of energy engineering, agricultural and medical biotechnology, nanotechnology, advanced materials, etc.

## MSCA in Israel

Experienced researchers willing to move to Israel can apply for an Individual Fellowship (IF) of the Marie Skłodowska - Curie Actions (MSCA), irrespective of their country of origin. Since 2014, forty researchers from various countries (including Italy, India, Portugal, China, Germany and others) have come to Israeli organisations as part of the Individual Fellowship (IF) program. Eighty-seven other researchers came to Israeli as part of the RISE and ITN programs.

Israel is a very active member of Marie Skłodowska - Curie Actions, with hundreds of collaborative links with countries, such as the United Kingdom, Germany, the Netherlands, Italy and France. The success rate of Israeli applicants is 15.7%, which is higher than the European average rate (12.66%).

## EURAXESS Israel

Six academic institutions are currently members of the Israeli forum of EURAXESS: Technion Institute of Technology, Weizmann Institute of Science, Hebrew University, Ben-Gurion University, Haifa University and Bar-Ilan University. IP&D is an SME which serves as the EURAXESS Centre for Industry and as an organisation representing EURAXESS' Bridge Head Organisation in Israel on behalf of the Ministry of Science.



#### EURAXESS Activity in Israel:

- Continuous contact throughout the year on issues relating to international researchers and the promotion of national policy on the subject;
- Participation in EU training and management meetings for the network;
- Organising conferences and study visits in Israel in accordance with network activities;
- Conduct two meetings a year on forum topics;
- Additional hosting and collaboration activities within Europe and biennial conferences of the entire network;
- Continuous activity of the European and Israeli portal, which includes information for mobile researchers in all countries as well as the publication of relevant positions for researchers.

### Israel as a destination

Israel's higher education institutions are known worldwide for their academic excellence, and many institutions offer programs in English, providing a unique international learning environment designed for students to learn and succeed. But there are a number of other reasons that Israel is an attractive destination for study and research. Israel, the land of innovation, also known as the "Start-Up Nation", is the place to be for innovation and technology. It is a hotbed of hi-tech activity, with the world's highest investment per capita in start-up companies. Israel was ranked the 3rd most innovative country in the world (World Economic Forum Global Competitive Index). Studying in Israel offers you the opportunity to experience and participate in Israel's vibrant start-up culture and ecosystem.

Whether you live on campus or off, in or out of the city, there's more to studying in Israel than just hitting the books. Israel has a vibrant student social scene with the opportunity to make life-long friendships with Israelis and other students from all over the world. You will also find yourself at the heart of a diverse, dynamic and constantly developing culture, with over 4,000 years of history, which have incorporated many different cultural influences. Whether it's food, history, art or music, you will have many opportunities to immerse yourself in Israel's fascinating culture throughout your studies. You can experience world-famous historical sites, float in the Dead Sea, go hiking in the beautiful Sea of Galilee region or the Negev Desert, marvel at the Baha'i Gardens in Haifa or enjoy a sunset on Tel Aviv beach.



## Meet the researcher: first Japanese ERC Synergy grantee Yohei Yamauchi

- Can you introduce your research interests to our readers?

Viruses are microorganisms that depend on their host cells to replicate and produce progeny. Many viruses therefore hijack our cell's protein machineries and cellular processes to enter the cell and to establish infection. My current research focuses on how pathogenic human viruses such as influenza A enters a human airway cell. Our research over the last 5 years uncovered remarkable strategies that Influenza (and other viruses, it is turning out) use in order to release their encapsidated genome into the host cell cytoplasm. This is a poorly understood step called virus uncoating. Uncoating designates the disassembly of the protective viral core (or capsid) in which the infectious genome is hidden from host immunity and host degradative enzymes. Viruses and cells appear to exchange cues that ultimately promotes virus capsid disassembly. The mechanisms of these stepwise processes take place at the interface of virology and cell biology, and this is the main interest of our scientific research. I love microscopy and try to employ electron microscopy, correlative light and electron microscopy (CLEM) and super-resolution fluorescence microscopy. In this ERC Synergy grant, we will investigate the mechanisms of viral infection and the commonalities between the cellular regulation of misfolded proteins and condensates with particular interest in the role of ubiquitin (a post translational modification prevalent in cells).

- How did you decide to apply for an ERC Synergy Grant?

It was my idea to put together this ERC Synergy team (Patrick Mathias, FMI Basel and Jeffrey Bode, ETH Zurich). After doing my MD and PhD in Nagoya Med School, Japan, from 2008 I became a postdoc at ETH Zurich. I moved to the University of Zurich in 2015, then again to the University of Bristol in 2016. During many of my 8 years in Zurich I worked with Patrick together on HDAC6- and ubiquitin-mediated influenza uncoating which was funded by a SystemsX grant from the Swiss National Science Foundation (SNSF). About the time I moved to the University of Zurich I also began collaborating with Jeff, who is a synthetic chemist, on a well-known antiviral protein called interferon-induced transmembrane proteins (IFITMs). Patrick and I had longstanding interests in how ubiquitin regulated viral uncoating and cellular aggregates, and we thought it would be great to have Jeff who already made synthetic SUMO and ubiquitin probes. We had our first official meeting at ETH Zurich in the middle of 2018.

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Yohei Yamauchi was born in Aichi, Japan, and grew up in US, Japan and UK. The Yamauchi lab, currently at the University of Bristol, unravels the mechanism of virus entry and virus-host interactions using high-throughput microscopy, cell and molecular biology and virus assays. The lab uses viruses as tools to identify novel cellular biology and understand underlying mechanisms. In 2019, he received an ERC Synergy Grant with the groups of Patrick Matthias (FMI Basel) and Jeffrey Bode (ETHZ).

After graduating Nagoya University School of Medicine, Yohei trained as a full-time physician at the Japanese Red Cross Nagoya First Hospital for 2 years, followed by a PhD (2005-2008). During his PhD he also worked part-time as a dermatologist. Since taking up a postdoc position in 2008 in the lab of Ari Helenius at ETH Zurich (ETHZ), Yohei has worked on the cell entry mechanisms of the ssRNA(-) virus influenza A which is known for causing epidemics and pandemics. In 2015 he moved to the University of Zurich (Öberassistent) and was awarded the Pfizer Award in 2016. Since 2016 Yohei is Associate Professor in Viral Cell Biology at the University of Bristol, United Kingdom.

Group website: [www.yamauchilab.com](http://www.yamauchilab.com)  
Twitter: <https://twitter.com/YamauchiLab>



*- How did you go through the process of application and writing the proposal: did it take a lot of time, what were the main difficulties?*

We had a brainstorm meeting in summer 2018 and discussed the outline of our project proposal. Our goal was to understand the role of ubiquitin chains in viral infections and to undertake multiple approaches from imaging-based screening, virus assays, molecular biology, synthetic chemistry, proteomics, structural biology etc. We also decided to do in vivo studies with the National Institute for Biological Standards and Control (NIBSC) in Hertfordshire, UK. I wrote the virus-related section and combined it with the molecular biology and chemistry sections written by Patrick and Jeff. I believe we had five aims and 4-5 work packages under each aim. Since the ERC requires two proposals B1 (short) and B2 (long), we wrote the B2 first after which we compressed it into B1 (5 pages) with a non-expert reviewer in mind.

Each PI wrote his own contribution, which we merged afterwards so that the whole grant read in a coherent way. We had multiple Skype sessions and many many versions of the proposal! We did not edit each other's figures though.

*- What do you expect the grant will bring to your career as a researcher?*

I read and heard that the ERC grant review process is extremely robust, such that it is hard to mimic by national funding bodies. The interview at Brussels is 45 minutes per team; much longer than the StG or the CoG. In addition, we received 10 expert reviews for the B2 part of the proposal, including from the interview panel at Brussels. It increases your confidence to think that so many experts rated our work highly. I believe that this ERC Synergy grant will boost my scientific career – I am the most junior member in our team - and also increase my visibility in the scientific community.

*- From your perspective, how can/should researcher mobility flows between Europe and Japan be improved? Also, what would be the barriers for research cooperation?*

I find it easy to collaborate in Europe since there is more fluidity in the movement of people, and a constant mixing of cultures is normal, especially in top institutes. I find this environment very stimulating and comfortable. ERC grants are written in English and this is very important to ensuring the highest possible quality of reviewers. On the other hand, Japanese research grants are written in Japanese, as far as I know, which ultimately limits the quality of scientists who will judge your work and understand it. I advocate that Japanese grants should be written in English so that it can be reviewed by scientists all over the globe, but this may take decades to realise, if ever. You are competing with the rest of the world and not just researchers from your own country! Mobility between Europe and Japan can be definitely improved – I personally

The European Research Council has awarded in October a prestigious [Synergy Grant](#) worth €7.6 million to a team of three co-PIs from the University of Bristol (UK), the Friedrich Miescher Institute for Biomedical Research and the ETH Zurich (Switzerland), for a joint research project looking at the molecular mechanisms of viral infection.

[Yohei Yamauchi](#), Associate Professor at the University of Bristol's School of Cellular and Molecular Medicine will work alongside Professor Patrick Matthias at FMI in Basel and Professor Jeffrey Bode at the ETH Zurich.

Regarded as the ERC's most competitive funding scheme, ERC Synergy Grants fund transformative research capable of yielding ground-breaking scientific results.

The €7.6 million grant will allow the interdisciplinary team to spend the next six years investigating the molecular mechanisms of viral infection, building fundamental knowledge of cellular regulation and developing new concepts for broad-spectrum anti-viral therapy.



have industry and academic collaborations in Japan as well as a visiting appointment at Nagoya University. I find that Japanese people's attention to detail and technology is remarkable, but too focused on publishing papers for the sake of it. Europeans' give more attention to what should be done rather what can be done – I like this approach since it makes scientists think deeply of why questions which is ultimately more important for ground-breaking research. I think the two approaches combined give rise to synergy and more collaborations need to be fostered between the Japan and Europe, especially between the younger scientists.

*- A final, more personal question: how do you envisage your career and where after the grant?*

I believe I will stay in academia in Europe for the foreseeable future.

*Thank you Yohei for your time and all the best for your ERC project!*



# EU-Japan cooperation: 5th Joint Committee on Scientific and Technological Cooperation between the EU & Japan

[Source: [EU Commission](#)]

Mr. Jean-Eric PAQUET, Director-General of the Directorate General for Research Innovation of the European Commission and H.E. Mr. NAKANE Takeshi, Ambassador for Science and Technology Cooperation of the Ministry of Foreign Affairs of Japan co-chaired the fifth meeting of the Japan-EU Joint Committee on Scientific and Technological Cooperation, organised under the Japan-EU Science and Technology Cooperation Agreement, which entered into force on 29 March 2011.

It was attended by representatives from the European Commission, the European External Action Service and Ministries and Agencies from Japan.

Co-chairs noted that research and innovation are among the key areas of cooperation between the European Union and Japan and acknowledged their strategic importance. Both sides explored how the EU and Japan can enhance their cooperation given the priorities of the new Commission, the recent important agreements, as well as in anticipation of significant policy developments over the coming years, Horizon Europe 2021-2027 and the 6th Science and Technology Basic Plan (2021-2025), both of which will be introduced in 2021.

Both sides presented their visions of the new opportunities under the EU-Japan Partnership on Sustainable Connectivity and Quality Infrastructure and shared their intention to work together on concrete steps to ensure its implementation.

Report from the 4th Task Force Meeting (Tokyo, 31 October 2019) reviewed the progress in the research and innovation collaboration between the EU and Japan since the last Joint Committee Meeting (Tokyo, November 2017) and explored specific priority areas for future collaboration. Subsequently both sides discussed present activities, new initiatives and the ways to strengthen thematic cooperation in the areas of ICT, quantum technology, artificial intelligence (AI), automated and connected driving, hydrogen, healthy aging, regenerative medicine and testing methods, safety of batteries, standards of solar cell, utilization of satellite information, and human-robot interaction.

Both sides shared the view on a need to investigate how to link Horizon Europe - especially Missions - to the Moonshot Research and Development Program (the Moonshot Program). As the Missions of Horizon Europe and the Moonshot Program will invite international collaboration, there is the momentum to allow



the EU and Japan to take the collaboration in research and innovation to the next level. The EU and Japan shared the view to work on strengthening cooperation in Horizon Europe and the Moonshot Program between the European Commission and the Cabinet Office of the Government of Japan. They also envisaged the possibility to work towards an arrangement in view of the EU – Japan Summit 2020.

Concerning the framework conditions for cooperation, the EU and Japan noted the opportunities created through the Implementing Arrangements, which allow researchers funded by the Japan Society for the Promotion of Science (JSPS) and Japan Science and Technology Agency (JST) to connect with the teams of researchers in Europe supported by the European Research Council (ERC). Both sides shared the recognition on further strengthening the schemes for mobility of researchers including through Marie-Sklodowska Curie Actions.

In line with the Joint Statement of the EU-Japan Summit 2019, both sides reconfirmed their commitment to the EU-Japan Science and Technology Agreement.

Both sides decided to hold the next Joint Committee Meeting in Japan in 2021. The date will be coordinated through diplomatic channels.



## EU Insight – Japanese government could budget yearly 10MEUR for Horizon Europe participation

[Excerpt from Science Business: <https://sciencebusiness.net/framework-programmes/news/japan-eyes-possible-eu10m-year-horizon-europe-partnerships>]

The Japanese government might budget about €10 million a year for greater scientific cooperation with the European Union on climate, agriculture, artificial intelligence and other strategic areas, according to Japan's vice minister for innovation policy.

In an interview with Science|Business, Koichi Akaishi, Vice Minister for Innovation, said his government wants to expand R&D collaboration with Europe – perhaps by becoming an associate member of its next big programme, Horizon Europe. “We might start with some very small funding, maybe €10 million” a year, he said, adding that he hopes for an EU-Japanese agreement on Horizon Europe by April 2020.

That depends on how quickly the EU decides on its own plans for cooperation - and in any case, the legal details of how the collaboration happens are less important than the fact that it does happen somehow, said Akaishi. It might also be possible to collaborate in simpler ways than formal Horizon membership – for instance, jointly planning calls for research proposals on specific topics.

“In this very difficult global situation, including a struggle for hegemony between economies, we think it's critical to have good cooperation with the EU” in R&D, Akaishi said. “We do not care so much about the modality, as long as there is a substantial cooperation.”

This unusual diplomatic dance began nearly two years ago, when the European Commission suggested it would like to see a big international expansion of Horizon Europe, as a way to work together on global challenges such as climate change, healthcare and artificial intelligence. At present, besides the 28 EU members, 16 other countries in and around Europe are formal members, meaning they contribute some money to a common funding pot so their scientists can compete for Horizon grants alongside EU researchers.

But progress in increasing the membership has been stymied by the commission's unwillingness so far to propose specific terms, for fear that could upset negotiations with the UK over Brexit and its own budget.



In September, a senior commission official said international negotiations can't go forward until the draft Horizon legislation is "stable" – which may take until at least next Spring.

Akaishi hopes for "an agreement on a framework for the cooperation" by April – even if only in the form of a memorandum of understanding. "But I'm not so sure about that. It seems that the bureaucratic process [in Brussels] of deciding the guidelines might take some time," he said. Nevertheless, meetings are scheduled in Brussels and Tokyo in December, and if all goes well Horizon could be on the agenda for a meeting in 2020 between Japanese prime minister Shinzo Abe and incoming European Commission president Ursula von der Leyen.

But first, the commission has to make its terms clear. "I am very much interested in discussing the possibility to become an associate of the EU's [Horizon Europe]," Akaishi said. "But the problem is that it seems that the EU has not decided what an associate is."

Among the unresolved issues are the financial terms. The commission has said it wants a "fair balance" with partners. Roughly speaking, a country's researchers can get about as much money out of Horizon as their governments contribute to the common pot. In principle, Akaishi said, "I don't think that's a very big problem," given that kind of reciprocal funding is common in international research.

But which parts of the programme are open to non-EU countries is also unclear. Akaishi said Japan wants to join the main part of the programme, funding big collaborative research projects on socially or economically important issues. But there's also potential interest in aspects, such as researcher travel grants to facilitate long distance R&D collaboration.

Specific topics for collaboration could include climate change, the ethics of artificial intelligence, agriculture, biotechnology for ageing populations, for example, relating to the development of cancer therapies, brain imaging, eliminating plastics and promoting a zero-waste circular economy.

These proposed Japanese moonshots bear similarities to Horizon Europe's proposed missions, which are also a series of big R&D goals around which it aims to mobilise funding.

These topics are global problems that coincide with Japan's national R&D plans. It is currently designing a new five-year plan for "moonshot" R&D projects in which the government plans to allocate Yen100 billion (€830 million) as seed money to start funding research on high-profile, big-ambition goals. In July, a panel of experts proposed 25 such moonshots.

They include automating all jobs in agriculture by 2040, eliminating all plastic waste from the earth by 2050, creating artificial hibernation technology that duplicates the metabolic state of naturally hibernating animal which during winter sleep are very resistant to serious injury, in humans, by 2050, or making



it possible by 2040 for “travel” by avatar – that is, paying virtual visits to other countries while physically staying at home.

A conference in Tokyo in December is due to debate the suggestions and the government aims to select the winners early next year. The initial budget, Akaishi said, is too small to achieve the goals, but the intention is to deploy other government funds in subsequent years. In the process, the government wants to change the way R&D happens in Japan, to make it more goal-oriented and more international.

*[read the full piece at: <https://sciencebusiness.net/framework-programmes/news/japan-eyes-possible-eu10m-year-horizon-europe-partnerships>]*