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Programme

9:00 – 9:05	Welcome address	
9:05 – 9:15	Conference introduction and schedule overview	Dr. Matthieu PY, EURAXESS Japan
9:15 – 10:55	Researchers' session I (chair: Dr Pierluigi OLMATI, Tokyo Polytechnic University)	Researchers presentations T01 to T05 p.4 to p.8
10:55 – 11:10	Coffee break	
11:10 – 12:15	Special Session A: European Researchers Diaspora in Japan: let's build a European researchers association!	p.19
12:15 – 13:30	Lunch break and poster viewing	Posters: - <i>Sciencescope</i> - <i>German JSPS Alumni Association</i> - <i>ACEJapan</i> - <i>Italian Researchers in Japan</i> - <i>NORAlumni Japan</i> - <i>Nerd Nite Tokyo</i>
13:30 – 14:50	Researchers' session II (chair: Dr Pierluigi OLMATI, Tokyo Polytechnic University)	Researchers presentations T06 to T09 p.9 to p.12
14:50 - 15:00	Coffee break	
15:00 – 15:30	Special Session B: Horizon 2020 for EU-Japan research cooperation projects: overview and experience feedback	p.20
15:30 – 16:30	Researchers' Session III (chair: Dr Pierluigi OLMATI, Tokyo Polytechnic University)	Researchers presentations T10 to T12 p.13 to p.15
16:30 – 16:40	Short break	
16:40 - 17:40	Researchers' Session IV: JSPS Postdoctoral Fellows Researchers' Session (chair: Dr Pierluigi OLMATI, Tokyo Polytechnic University)	Researchers presentations T13 to T15 p.16 to p.18
17:40 - 18:40	Special Session C: European Researchers in Japan: Career Paths and Future Opportunities	p.21
18:40 - 18:45	Closing remarks	
18:45 - 20:15	Networking reception	



Researchers Sessions: presentations by European researchers based in Japan

Speakers:

Talk #	Name	Family name	Institution	Dept	Position	Nationality
T01	Cedric	RENTIER	Tokyo University of Pharmacy and Life Sciences	Department of Medicinal Chemistry	Post-doc	France
T02	Martin	POHL	Tsukuba University	Faculty of Humanities and Social Sciences	Professor	Germany
T03	Bill	SOEDERSTROEM	OIST	Structural Cellular Biology Unit	Post-doc	Sweden
T04	Kenn Nakata	STEFFENSEN	Temple University Japan / University of Tokyo	Institute for Advanced Studies on Asia	Assistant Professor	Denmark
T05	Cornelia	LAWSON	University of Tokyo	Graduate School of Pharmaceutical Sciences	Post-doc	Germany
T06	Diane	DELOBEL	RIKEN	Center for Life Science Technologies, Division of Genomic Technologies	PhD Student	France
T07	Marco	VISENTINI-SCARZANELLA	Toshiba Corporate Research and Development Center	Multimedia Laboratory	Researcher	Italy
T08	Stefania	SOLDINI	JAXA	ISAS, Dept of Space flight systems	Post-doc	Italy
T09	Beate	HEISSIG	University of Tokyo	Center for Stem Cell Biology and Regenerative Medicine	Associate Professor	Germany
T10	Stephen M.	LYTH	Kyushu University	WPI-I2CNER	Professor	UK
T11	Francesco	SCANTAMBURLO	INFN	Rokkasho	Researcher	Italy
T12	Sofia	PASTOR MATAMOROS	University of Toyama	Department of Art Education	Graduate Student	Spain
T13	Flavia	FULCO	Sophia University	Institute of Comparative Culture	Post-doc	Italy
T14	Samir	KHAN	University of Tokyo	Department of Aeronautics and Astronautics	Post-doc	UK
T15	Marine	LASBLEIS	Tokyo Institute of Technology	WPI-ELSI	Post-doc	France

Development of myostatin inhibitory peptides for muscle atrophic disorders

T01

Cedric Rentier¹

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Myostatin is a protein responsible for the negative regulation of skeletal muscle growth. A lack of myostatin in the organism will cause a substantial increase in the muscular mass of an individual. Based on these considerations, a myostatin inhibition strategy appears as an attractive therapeutic approach towards several muscle atrophic disorders, including Duchenne muscular dystrophy, or against aging-related muscular problems. As the Japanese population over 60 is predicted to increase in the next decades, this is a very relevant concern.

Our group's recent findings have described approaches involving for the first time small peptides inhibiting myostatin¹. In particular, The N-terminal substituted peptide with a 2-naphthyloxyacetic group (see Figure 1) improved the IC₅₀ of the original peptide (N-terminal = Trp) by a factor 3, in the micromolar range.



Fig. 1 Representative example of a myostatin inhibiting peptide. The 2-naphthyloxyacetic group is highlighted in blue.

the

After obtaining in July 2015 a PhD in Chemical Biology in a European context (cotutelle project between University of Cergy-Pontoise, France, and University of Florence, Italy), I started my postdoctoral fellowship at Tokyo University of Pharmacy and Life Sciences under a MEXT funding in October 2015. After a fruitful year of research, I applied and successfully obtained a 24-month postdoctoral grant from the Japanese Society for Promotion of Sciences (JSPS), from October 2016 to September 2018.

Working in two different universities across Europe helped me adjust to research-related problems that can arise because of cultural differences. This is definitely a helpful skill in Japan, but the language barrier and the fact that non-verbal communication is much more prominent here tend to complicate the things unnecessarily compared to my previous experiences.

As for the future, I have not decided yet whether I want to come back to Europe or stay in Japan; in academia or in the industry. Foreigners in Japan are often considered as valuable workers for their tendency to think out-of-the-box compared to their Japanese counterparts, but can suffer when it comes to required knowledge of work culture, administrative processes and integration into the group.

¹ K. Takayama, A. Nakamura, C. Rentier *et al.*, ChemMedChem, 11, 845-849, 2016.



The “Fourth Industrial Revolution” as a Management Challenge

T02

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(Research) The ‘Fourth Industrial Revolution’ has already started. It will have a profound impact on the way people will live, how governments will act and how companies will do business. The speed of change, however, is uncertain, as is the speed at which technologies will succeed first and which part of the society structure will be affected most. Furthermore, the effects will have a global impact and this will demand a new concept of human being.

Companies already involved in this new era due to their products or services, or way of production, are fully aware of the fact that they have to act to remain competitive. However, actions until now tackle the present and anticipated future changes using traditional management thought: focusing on technology and marketing. This approach is limited. Also the concept by the Japanese government of creating a “Society 5.0” has not been adopted yet by Japanese or non-Japanese enterprise. Since the entire business environment will fundamentally change, management thought has to consider first the functions which society will set companies in the future. In doing so, it is suggested that enterprise may engage actively in the public debate on ethical questions defining the future framework in which business may be permitted to operate by society.¹

(Experience) In 2010 I was hired for the “G-30-Programme” as ‘associate professor’. My job in Tsukuba turned out to be a challenge: The university had no experience in attracting qualified students. Only teaching for the undergraduate program was appreciated. Since some years, I am teaching as well in the Master- and PhD-program and do research. However, observers say the “G-30-Program” seems to be shaking and serves mainly as platform having statistical evidence of the university doing some international activities. There is a split in the Japanese faculty whether accepting foreigners as equal colleagues or as temporary workers. Colleagues say the implementation of the “Super Global University” is enforcing non-Japanese cultural elements into the Japanese context. Cuts in the overall university budgets is combined with the request to reduce staff on an annual basis. Foreign observers say that Japanese (national) university system is rigid and as such in a deep crisis. For clear defined research projects where Japanese knowhow is advanced and resilient relationships to the Japanese colleagues are given, Japan may be a good destination for European researchers as a temporary step in their career.

(Outlook) Beside my academic work I am member of an advisory board of a Japanese-German company. The relation to the Japanese company management is trustful. My future may be either in the academics or private or semi-private field, if in Japan or Europe is not decided yet.

¹ Martin POHL, *Journal of International and Advanced Japanese Studies*, 17-33, 2016



Understanding the bacterial cell division machinery using advanced imaging at Okinawa Institute of Science and Technology (OIST)

T03

Dr. Bill Söderström

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In a world where antibiotic resistance is becoming a threat against our general well-being, new ways to combat bacterial infections are of uttermost importance. In order to identify novel targets for antibiotics a deeper understanding of the dynamics, inter-protein interactions and the internal structure of the bacterial cell division machinery (divisome) is critically needed. In my current project as post doc at OIST, I combine advanced imaging methods^{1,2} in order to elucidate molecular details that are lacking to in a meaningful way isolate interactions between proteins within the divisome³. This new knowledge will most likely aid the development of novel antibiotics.

I was given the opportunity of work in a highly interdisciplinary environment from day one of my PhD, and have ever since interacted with people from different scientific backgrounds on a daily basis. I believe that has formed me as a scientist and will continue to be highly advantageous for my future career. After completing my PhD in biophysics at Stockholm University in 2014, I took a leap of fate and moved to a new university on a small tropical island to do a post doc in a to me new field (cryo-electron microscopy), a decision I have not once regretted and hold as one of the best I ever made! I really enjoy what I'm doing, and most days enter the lab with a smile and therefore I would like to think I would have too much difficulties continuing doing science if that is what I in the end opt for. Being at OIST has and still is providing me an excellent foundation to grow as a scientist and increase my international contact net. OIST is quite unique in the regard that it is funded largely by the Japanese government, which takes some focus of the ever-lurking grant application pressure (although, all OIST researchers are encouraged to apply for Kakenhi and such). Instead are all research groups thoroughly evaluated each 5 years, and if the group does not meet the requirements; you're out.

Currently I have active collaborations with researchers from Sweden (my native country) and the US, and I am currently discussing new potential collaborations with people in England, Spain and France. Most of my collaborations have been initiated while at conferences; For the PhD students reading this, I cannot stress enough the importance to attend international conferences, especially conferences specific to your field. And related to that, apply for external travel grants; during my PhD time I received a total of 8 grants that allowed me to travel independently on my own budget.

Even though I have still time left on my current contract I have started to look into options that would allow me to stay at OIST as staff, it is an amazing place to be. If you haven't been there, you must visit!

¹ Söderström B, Mirzadeh K, Toddo S, et al., *Molecular Microbiology*. 2016 Aug;101(3):425-38. doi: 10.1111/mmi.13400.

² Daley DO, Skoglund U, Söderström B. *Scientific Reports*. 2016 Sep 9;6:33138. doi: 10.1038/srep33138.

³ Söderström B, Daley DO. *Current Genetics*. 2016 Jul 8. doi: 10.1007/s00294-016-0630-2



The Political Thought of the Wartime Kyoto School: From Side-stepping and Side-swiping to Filling the 'Japan-shaped Hole' in Political Theory

T04

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The presentation is based on a completed book chapter.¹ Between 1932 and 1945, the Kyoto School produced Japan's so far most original contributions to modern philosophy. Political philosophy is the most misunderstood of the various areas it addressed, and the responses have tended to be of two kinds, neither of which has taken it seriously as a contribution to political philosophy/theory. As James Heisig characterized it, the debate has been 'a dialogue of the deaf' between 'side-steppers' and 'side-swipers', with one end of the spectrum treating the political ideas as a series of 'questionable footnotes' (Davis 2010) to an otherwise sound philosophy of religion, and the other dismissing the entire body of thought as 'defining the philosophic contours of Japanese fascism' (Najita & Harootunian 1988). The presentation will argue that Kyoto School political thought has been given short shrift both by the School's defenders and detractors, who have tended not to approach it as engaged political theorizing to be judged by the disciplinary standards of political philosophy/political theory. It will suggest that the way forward lies in inserting Kyoto School political studies into the vibrant field of comparative political theory, where there is a notable absence of contributions relating to Japanese thought. This 'Japan-shaped hole' is all the more conspicuous when considering that the Kyoto School philosophers were among the first to take a self-consciously dialogical and non-Western standpoint to systematically address a number of still relevant problems, such as universalism and Eurocentrism, the nature of modernity, ethnicity in politics, identity, subjectivity and community. In a certain sense, the Kyoto School was engaged in comparative political theorizing before the term was coined.

The feedback on personal experience will include aspects of the fellowship scheme and the new relationship to Europe that has emerged out of the Japanese work experience. This will cover considerations on changing host institution for the reintegration phase due to unpredictable changes in the home department, future plans and prospects in light of the different career opportunities and structures in Ireland/Europe and Japan, and reconciling family life with international mobility and career progression.

¹ Steffensen, Kenn Nakata "The Politics of and Around the Kyoto School: Beyond 'questionable footnotes' and 'Japanese-style Fascism'. Chapter 5 in Yusa, Michiko (ed.) *The Bloomsbury Research Handbook in Contemporary Japanese Philosophy*. London: Bloomsbury, June 2017



Dual Appointments and Open Science A comparative study of Japan, UK and Germany

T05

Cornelia Lawson¹

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This study sheds light on the unexplored phenomenon of multiple institutional affiliations using survey data. Institutional affiliations are important in the organization and governance of science and multiple affiliations may alter the traditional framework of academic employment and careers and may require a reappraisal of institutional assessment based on research outcomes of affiliated staff.

Results for authors in three major science and technology nations (Germany, Japan and the UK) and in three fields (biology, chemistry, and engineering) show that multiple affiliations have at least doubled over the past few years (Fig. 1).¹ A survey shows that the rate of multiple affiliations amongst academics is higher than could be measured from publications (18%). It also sheds lights on the factors that could explain increased performance, namely reputational and network gains associated with dual affiliations and country and field differences.

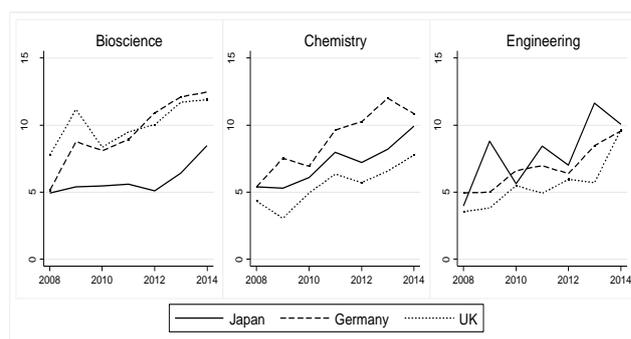


Fig.1 Share of multi-affiliation authors

This research is done in collaboration with researchers in Germany and Japan. In conducting this research we successfully applied for matched funding from the DFG in Germany to conduct the survey there. The international nature of the survey required a lot of coordination between the UK, Germany and Japan. Much of this was done by Skype. I also sought the collaborating of academics in Japan to help with the development of the questionnaire and to provide insights into current discussions around open science. I have presented my work at various university departments and government institutes in Japan to raise the profile of my research. In 2017 I will return to the UK to take up a tenure-track position at the University of Bath. I am looking to continue the collaboration with Japan.

¹ Lawson, C. and Hottenrott, H. (2016). A first look at multiple institutional affiliations: a study of authors in Germany, Japan and the UK. Discussion Paper.



Future Medicine and Genetic Tests

T06

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Medicine evolves with technology advances and new discoveries made every day. This evolution can be found in treatments offered to patients as well as at the diagnosis level, which aims to detect a disease at the earliest stages of development. Today it is possible to detect some specific markers and start treating a disease even before any symptom appears. Other markers permit to predict a resistance to a drug, which will be inefficient and which should then be avoided. Future Medicine is actually already present in our lives, and my focus for this presentation is on genetic tests as well as the Eprobe technology that has been developed by our team.

Eprobe permits to detect specifically and in real time a DNA amplification reaction (either in PCR or in isothermal conditions) because its hybridization is dependent on a target sequence. This means it is possible with an Eprobe to detect a gene normal or “Wild-Type” versus a “mutant” that could be responsible for a disease or a drug resistance. It is also possible to control the sequence amplified using Eprobe in a melting curve analysis. Various versions of Eprobe, with different DNA sequences, were tested on genes involved in cancers (EGFR¹ and KRAS²), sometimes multiplexing using two fluorescent dyes. It is possible to design Eprobes to target any mutation in the genome and we recently published an online tool, Edesign³, to let anyone design the Eprobes they need for their sequences of interest.

I have always been fascinated by the concept of personalized medicine and this is why I enrolled in a master's degree with a major in genomics. During my master's, I had the chance to perform a 6-month traineeship in pharmacogenomics in the USA and the following year another 6-month traineeship in pharmacogenetics in France. While looking for a job, I responded to an offer for a 6-month grant project (ENCODE) at RIKEN in Japan and I thought it would be great to discover yet another work environment while still focusing on the field that I feel so passionate about. RIKEN is such an international research center, I have been lucky to meet and work with fantastic researchers from all around the world, many from Europe, either employees or coming with various grants from different countries. My experience here has been so enriching that after my 6-month contract finished I applied to stay longer. I have now been working at RIKEN for nearly 5 years and I am still learning new things everyday while doing my best to advance the field of pharmacogenomics and personalized medicine and helping patients worldwide. I am also using my position as a Research Associate to work on getting a PhD.

¹ Takeshi Hanami, [Diane Delobel](#), Hajime Kanamori et al., *PLoS ONE*, 2013

² Jun Atsumi, Takeshi Hanami, [Diane Delobel](#) et al., *Oncology Reports*, 2015

³ Yasumasa Kimura, Takahiro Soma, [Diane Delobel](#) et al., *PLoS ONE*, 2016



Machine Learning for Endoscopy Navigation from Academia to Industry

T07

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In medicine and particularly in endoscopy, the ability to perform 3D reconstruction from a single frame has been an active area of research for the past 15 years. The rewards of developing techniques for 3D reconstruction in endoscopy are great, ranging from cancer diagnosis assistance based on polyp size, to navigation assistance, to alignment of preoperative scan data for augmented reality applications.

In this talk, a machine learning-based system¹ able to convert an incoming video frame into depth information (Fig. 1) will be described. The system was achieved by modelling the relationship between the light reflected by the tissue and the endoscope illumination. Rather than modelling it explicitly, the relationship between geometric structure, incoming light and tissue material properties is estimated automatically through novel machine learning techniques. Learning techniques are ubiquitous, and similar methods are used in wide-ranging fields such as machine translation, image understanding and up to item recommendations on music and online shopping websites. Results on bronchoscopic sequences will be presented, showing an average accuracy of 1.5 mm, which is within the safety margin for applicability.

While the project was carried out this year, the original plan was laid out already in 2013 as a proposal for the Toshiba 2014 Fellowship Programme, which is available for UK-based EU researchers in a variety of fields in science and engineering. However, having been accepted for both the JSPS and the Toshiba programmes, the original starting date was postponed by a year in order to first carry out the JSPS fellowship at the University of Kagoshima.

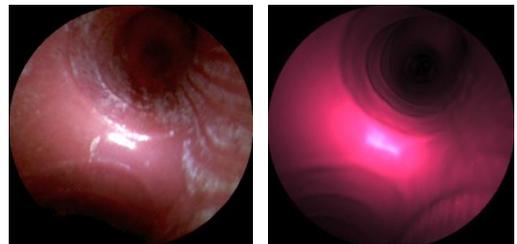


Fig.1 Video frames from bronchoscopy and estimated rendering

Therefore, in the second part of the talk my subjective experience in both academia and industry in Japan will be described, highlighting the differences with my previous experience in Europe. In particular, the effects of local customs in corporate and university culture on the ability to conduct research will be outlined. Finally, an account of my recent job search experience will be given. Ultimately, in this talk I will attempt to answer the question: “Is coming to Japan a good move for a career in computer science?”

¹ M. Visentini-Scarzanella *et al.*, “Deep Monocular 3D Reconstruction for Assisted Navigation in Bronchoscopy”, *International Journal of Computer Assisted Radiology and Surgery*, 2017 (*To appear*).

Japan's Hayabusa2 Asteroid Sample-Return Mission: shooting Ryugu

T08

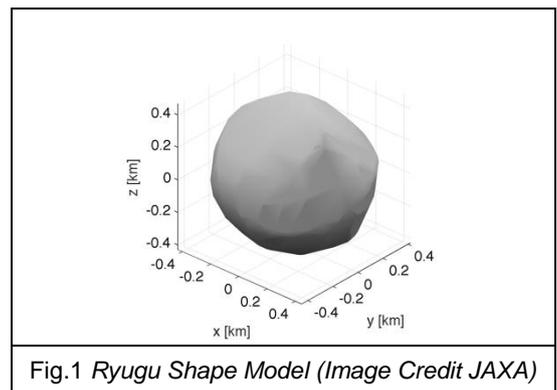
Stefania Soldini

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Hayabusa2 mission is the Japanese sample and return mission to Ryugu asteroid launched in 2014. It is the successor mission to JAXA's Hayabusa mission to Itokawa asteroid. The rendezvous between Hayabusa2 and Ryugu is expected in June 2018 followed by the asteroid sampling phase in the first half of 2019. The new challenge that Hayabusa2 will face is the asteroid shooting phase. This will create a crater on Ryugu surface allowing the sampling of fresh material to be return to Earth.

The aim of this research is to investigate the hazard pose by the asteroid dust particle to Hayabusa2 spacecraft. Natural impact phenomena on asteroids observed from Earth suggest that dust particles of 1 cm size in diameter can be captured for several months in orbit around the asteroid. These conditions are extremely dangerous for Hayabusa2 spacecraft as impact with small particles can damage the spacecraft structures and compromise its functionality. Numerical models are currently under development to simulate the highly perturbed environment around Ryugu including the shape model of the asteroid, Figure 1, and the effect of the solar radiation pressure. The dust cloud is initialized following analytical empirical law obtained from experimental studies. The evolution of different size of dust particle is than integrated in time to predict their motions. Together with the numerical experiments, a semi-analytical approach is used to study the region of natural stability around Ryugu where the dust can potentially be captured.



Working at JAXA is very exciting, it provides significant benefits for my current research and my future career. JAXA's Hayabusa mission was recognized by Guinness World Records as the first spacecraft to return asteroid material on Earth that is why it makes undertaking this research in Japan unique. It is the first time that I apply my research findings to a real mission with the possibility to learn from the experience of a real application and JAXA's experts. In this talk, I would like to show the current collaboration I am leading between Japan and Europe for a solar sail mission to trojans asteroid, the benefit of the JSPS program and my future plan to extend my stay at JAXA. My ultimate goal is to work in the future for the Near Earth Object Planetary Defense program by promoting synergies between Europe and Japan for example through my participation at the future ESA's AIM missions.



The niche/microenvironment shapes the fate of researchers and stem cells

T09

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I am an Associate Professor at Division of Stem Cell Dynamics, Center for Stem Cell Biology and Regenerative Medicine, the Institute of Medical Science, the University of Tokyo (Japan). My laboratory studies the role of adult stem cells in regenerative and cancer biology thereby using in vivo mouse models, molecular and cell biological techniques to achieve a system level understanding of these complex processes. Recently we discovered that protease activation also controls the cancer niche cell composition. We suggest that the proteolytic balance controls the cellular behavior of stem cells important for regenerative medicine and cancer.

On graduating medical school, I worked as a physician in the field of internal medicine/hematology/oncology at the University Tuebingen and Heidelberg from 1990 to 1998 (Germany). My interest in stem cell and vascular biology, and cancer biology further developed working as a postdoctoral fellow at Memorial Sloan-Kettering Cancer Center and at Cornell University, New York (1998-2002, USA). Due to personal reasons, I decided to move to Japan, Tokyo, where I joined the Center for Stem Cell Biology and Regenerative Medicine, the Institute of Medical Science, the University of Tokyo. Being part of a special program to support young people to become independent (Frontier Science Research Project, MEXT), I became independent and a faculty member of the Institute of Medical Science, the University of Tokyo in 2008.

I always obtained funding to guarantee my next position in a new country: The move to the US for a post doc was founded by a grant from the German cancer society. The move to Japan as a post doc was supported through research funds from the Humboldt society, and the Leukemia & Lymphoma society, that provided me with salary and research money. Later I received JSPS funding (since 2004). Difficulties here in Japan: Especially in recent years, the main Japanese research funding organizations support joined research projects. I did not grow up in the scientific community in Japan, making it difficult to find research partners.

I hope to expand my scientific niche in Japan. Join my niche!



Engineering Carbon for Energy Applications, and Managing a Bilateral Career

T10

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Hydrogen- and fuel cell-related technologies are at an advanced stage in Japan. Commercialization of stationary fuel cells (*EneFarm*) and fuel cell vehicles (Toyota Mirai, Honda Clarity Fuel Cell) are well underway. Kyushu University is at the forefront of hydrogen and fuel cell research in Japan. In this talk, I will summarize career and research in the field over the past 8 years in Japan.

I arrived in 2008 fresh from my PhD. After 6 months looking for work, a failed JSPS Fellowship application, and almost giving up the idea of working here, I got a postdoc on a NEDO project at Tokyo Institute of Technology (advertised on JREC-IN), working on platinum-free electrocatalysts for fuel cells. In 2011 a Japanese friend was promoted, and said: *"If you don't apply, you won't get the job"*. Being jealous, I applied for over 20 faculty positions all over Japan with no success. Finally, the WPI program at Kyushu University was looking for international faculty, and 5 of us were hired. An independent researcher I could develop my own research projects, diversifying into e.g. materials for hydrogen storage, electrolysis, and CO₂ conversion.

Funding is massively important. In the first few years as faculty I applied for every single relevant grant. After *four* attempts I got Kakenhi (Wakate B). Internal university grants have been very useful. I have contributed to several larger projects (CREST, KIBAN-S), and industrial grants (e.g. ENEOS), which is where contacts with friendly Japanese professors is useful.

Living and working in a completely different culture (especially Japan!) can be challenging for anyone, and organizations like EURAXESS can help in building support networks. Contacts back home can also be hugely important, and travel to conferences is important for building these international networks. In Europe there is a lot of respect for Japan in science and engineering. People are also impressed with the effort to live and work in a different culture. After meeting a student at a conference, I visited their lab at Leeds University (my home town) to give a talk. This led a Visiting Professor position and a 2-year RSC Mobility Fellowship for travel between Japan and the UK.

The next step for me is tenure at Kyushu University. In preparation for this I am collaborating and building my relationships with Japanese academics, publishing as much as possible, applying for grants, learning Japanese, attending international and domestic conferences, teaching international courses, and generally contributing to the university.

Hydrogen Energy Engineering: A Japanese Perspective, Springer (August 2016), K. Sasaki, H-W. Lee, A. Hayashi, J. Yamabe, T. Ogura, and S. M. Lyth

LIPAc, the prototype accelerator: alignment challenges, current status and possible future improvements

T11

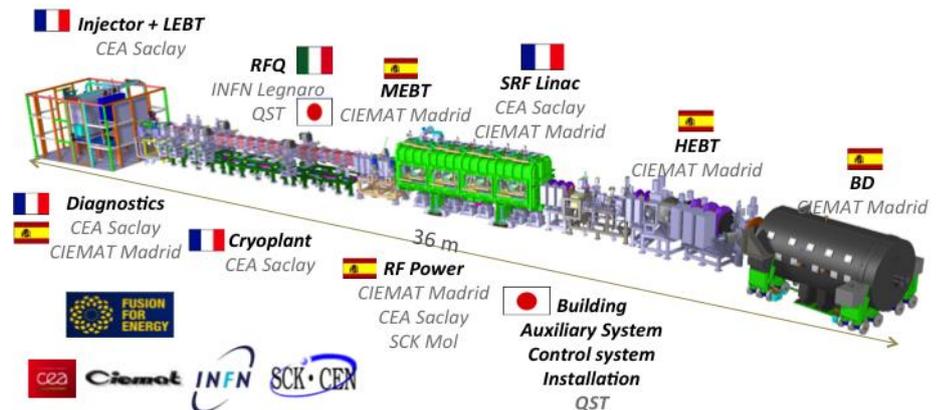
F. Scantamburlo, J. Knaster

Project Team IFMIF/EVEDA, Rokkasho

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I am an Italian researcher working in the framework of the IFMIF project (www.ifmif.org), a facility to test the materials under neutron irradiation. IFMIF (International Fusion Material Irradiation Facility) will be a Li(d,xn) neutron source providing equivalent neutron spectrum of DT fusion reactions and comparable neutron flux of future commercial reactors. Such a facility is an essential step in world fusion roadmaps to qualify suitable structural materials capable to hold the unrivalled neutron irradiation inside the nuclear vessel of a fusion reactor.

IFMIF, presently in its EVEDA (Engineering Validation and Engineering Design Activities) phase is installing LIPAc (Linear IFMIF Prototype Accelerator) in Rokkasho (Japan), a validating prototype of IFMIF accelerators with many European institutes involved. I started to work for this project in 2010 in Italy at INFN



(Istituto Nazionale di Fisica Nucleare) Legnaro, where I did my PhD. After I completed successfully my PhD, I was offered a possibility to move in Rokkasho and I accepted. I am contracted by INFN Legnaro and seconded by F4E (Fusion for Energy). I was quite interested to follow the installation and the evolution of the accelerator from a closer point of view and I had strong motivation to learn as much as possible also of other components of the accelerators and their installation. Among many activities, I am currently manly involved in Rokkasho facility as metrology responsible in Rokkasho site, especially in the alignment of the accelerator in the assembly vault.

A strong collaboration with the European labs and with the Fusion For Energy Metrology team with many iterations and communications was established to optimize the alignment of the components inside the assembly hall and the quality assurance (QA) procedures to be followed.

The results of these cooperative research campaigns will be presented.



Japanese Aesthetic Expression and Spanish Aesthetic Appreciation as source of a balanced methodology in Art Education.

T12

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This study has been designed as a tool as a compilation of the possibilities of balance the aesthetic appreciation and the artistic expression through the good practices of Spanish and Japanese methodologies in art Education. The foster of creativity and cognitive processes of Japanese textbooks made me rethink the approaches to artistic expression in Spain to make a change from the good experiences of Japanese education. The Spanish strong point in Art Education is the easy access to visit museums and artworks of in the community as booster of understanding of their cultural identities. This kind of culture is not set in roots of Japanese Education. It was ambitious to join the good points of both teaching together. But it was absolutely successful.

During the current four years of this research, I have visited schools of both countries for understand the realities at scholar institutions and study deeply its Courses of Studies. Therefore, I've held different experiments to overcome the cultural differences of both countries methodologies and introduce strengthens of Japanese artistic expression in Spain [(a) Research in use of didactic materials and adaptation of the Japanese textbooks to the Spanish course of studies by University Kindergarten teachers; (b) Introduction of Japanese concept of *play full creation* in Spanish elementary schools.] and the Spanish aesthetic appreciation in Japan. [(a) Visit an art museum with Japanese kindergarten children based on a previous project in Spain¹.]

In this time I've faced the fears of elementary and kindergarten education teachers of both countries to show me their daily activities and introduce new projects not based in their roots. I've experienced the hardness of Japanese Academia and its differences in social approach. Also the need of a better education on Art Education field at teacher training universities and the enjoyment of teachers to be designing activities and adapting the new models to their own curriculum. I've decided to become university professor in the Department of Art Education for overcome the fears of teachers and encourage the teachers to be. During my next four years of PhD in Spain, I plan to design a new model of art education meaningful for the challenges of the developing field of image, by giving tools to the students for grown and innovate in creation, and encourage the teachers to act like guides of the children's learning process. I want to show to each university student the importance of a high quality Art Education for the development and improvement of European and Japanese economies and cultures, with a model of Education adaptable to maintain the culture of each country and based on the respect of other's productions.

¹ S. Pastor Matamoros, A. Sumi., *Educational Research: University of Toyama human development science research practice Bulletin of Research and Development Center.*(10), 43-52, 2015.



Remembering disasters: cultural practices after 3.11

T13

Flavia Fulco

¹ *JSPS Postdoc visiting researcher at Sophia University - Institute of Comparative Culture*

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I am currently a visiting researcher at Sophia University in Tokyo, where I am conducting my research in the context of the project “Voices from Tohoku” led by Prof. David Slater, thanks to a JSPS Foreign Research Fellowship.

Studying how recovery process is affecting communities, I am interested in the issue of memorialization of the disaster and other cultural practices of memory preservation, giving a particular space to oral narratives as a way to collect data. I am interested in these topics and approach for different reasons.

First, I am interested in community identities and in the reciprocal influence between individual and group narratives. The way we remember is strongly related to our present identity, and when a disaster destroys the environment people where accustomed to live in, the lines between what is remembered and what is re-invented become blurred and offer an interesting insight on social relationships. Second, I am curious about why some specific places or stories are chosen to be the core of memorialization, because these will be the pillars around which communities will rebuild their identities. And third, I believe that what happens to a community after a disaster is something that has not been deeply analyzed under a cultural point of view yet. Trying to work in this direction, I would like to explore Japanese reality in a comparative approach with other realities, such as Italy, where the perception of risk towards natural disaster, like earthquakes, is still very poor.

My experience in Japan is quite articulated. I came right after earning my PhD In Italy, in 2011. I had studied the Japanese-Brazilian communities, focusing on the issues of memory and identity and coming to Japan I wanted to pursue my career as a researcher, but in the beginning it was very difficult to find a way. I started by enrolling in a Japanese language school to improve my skills. After a few months I found a job as a teacher of Italian in a language school. This experience was particularly useful, because it gave me an insight into Japanese mentality and society. While working, for almost three years, I looked at ways to go back to academic research and finally I decided to apply for the JSPS postdoctoral fellowship. I am deeply grateful to the JSPS for awarding me. I got the chance to widen my interests and I am also improving my methodology as a social scientist. When my fellowship will expire next year I think I will be able to look into positions both in Humanities and Social Sciences, which is ideal, because I firmly believe in the importance of interdisciplinary approach when dealing with complex issues such as memory and identity. I would also like to relocate in Europe, while maintaining strong relationships with Japan. What I would like to find is a position that allows me to continue my researches on post-disaster culture, using a comparative approach between Europe and Japan.



Resilient informatics platform for next generation health monitoring of aerospace components

T14

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As our society becomes more automated and technology efficient; the need to implement more effective health monitoring algorithms becomes important for its maintenance. However, these advances are dependent on high quality data from multiple sensors to predict the behaviors of the system operation and make corrective responses. This type of system can become very brittle, especially when unrecognized degradation in sensors themselves can lead to incorrect responses by the algorithm and, potentially, a worsened condition relative to the desired operation from the system. Therefore, managing a resilient health monitoring platform requires the synergy of diagnostic and prognostic algorithms to recognize sensor degradation, as well as failures within electronic equipment. This research work built upon Dr Khan's European research experience to help manage health monitoring systems in order to support system level decisions, and hence reduce the impact of system failures. The aim is to develop a decision making platform.

From an impact point of view, the research develops on the authors previous work related to the seamless system integration, a distributed solution and organizational decision making. Resilience has been a key theme, by maintaining system awareness and an accepted level of operational service in response to failures. This greatly reduces the time required for fault analysis. Also, the use of Artificial intelligence can help provide faster sensor data rates to achieve higher data resolution accuracy. The target application of the system aims to provide precise and robust fault isolation in avionic systems within aerospace. Reducing the downtime for maintenance can help maintain availability requirements.

Undertaking this project has been instrumental in carrying out the fundamental research in the field of fault analysis and bridging the research gap in Europe. It has given the participating researchers the ability to develop upon their system engineering experience and further develop skills by working with other world leading Japanese professors of artificial intelligence, software development and product commercialization. The exposure of this environment has already brought a wealth of knowledge in the area of using machine learning algorithms for developing new techniques for maintenance systems. To achieve these goals, this JSPS fellowship grant has been extremely valuable as it is helping to solve initial questions, laying the ground work for future research aspirations. After the fellowship, Dr Khan will continue to advance his work within the UK by establishing his own research group, through his PhD students and dedicated funds to set up his own machine learning lab within his University. Therefore the societal impact of this fellowship will be able to help foster the next generation of engineers.



Deep Earth from a laptop

T15

Dr./Ms. Marine Lasbleis

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My main research interest is the core of our planet: 3300km-radius sphere of iron, whose center is solid and slowly freezing. Far beyond the reach of direct sampling, it's observed mostly with seismic waves. It's also the place where the magnetic field of the Earth is generated by the stirring of the liquid iron alloy, protecting the atmosphere and life on Earth from the charged particles carried by solar winds. How is this magnetic field generated? What are the forces that make this giant iron ocean flow beneath us? These questions are still open, and they are driving my research, from France to Japan. I am a geophysicist, constructing models of the Earth's core, and especially Earth's inner core¹, to be run on my computer (and sometimes on bigger computers). The main goal is to understand how the core and inner core flow. Since I came to Japan, I also explored the early stages of the Earth: magnetized rocks as old as 3.5 Billion years have been found, but was the magnetic field similar to today's magnetic field? I am developing new models for the inner core crystallization, considering stratification in the liquid core that could be remnants of a density stratification obtained during the formation of the Earth.

I came in Japan as a JSPS post-doctoral Fellow in April 2015, with my companion and my son. Moving to a country where you don't speak the language and can't read a character is already challenging and frustrating. Adding a 1-year-old toddler and a spouse in the equation is another joy. We were especially lucky to solve the "2-body" problem by both obtaining a JSPS post-doctoral fellowship, and also by integrating English-speaking working environments that helped us to settle in Tokyo very smoothly. Upon arrival, an apartment and a day-care were immediately provided by my institution, ELSI (Earth-Life Science Institute), in Tokyo Institute of Technology. ELSI is part of WPI (World Premier International Research Center Initiative). It is very international, as only half the institute is Japanese, and the rest come from all over the world. Researchers cover fields from biology to astrophysics. I had to learn a lot during the first months about other fields related to the early Earth and early environment but also on how to communicate my scientific field to a very diverse audience. Interacting with researchers from diverse countries was also more difficult than expected: for example, French people tend to speak whenever there is a blank in the conversation, while Japanese people I have met wait and catch the moment to better articulate their thoughts.

I have just been offered a research scientist position to continue my research at ELSI. Of course, I'm looking towards finding a stable position that allows me to develop long term research plans and settle my family. Being in Japan has been an everyday adventure. I can the same day explain to a virus biologist how studying the Earth's core will help us understand the early Earth environment and discuss with my son's *sensei* a French song he was singing with my almost nonexistent Japanese skills!

¹ M. Lasbleis and R. Deguen, *Physics of the Earth and Planetary Interiors*, 247, 80-93, 2015



Special Session A: European Researchers Diasporas in Japan: let's build a European researchers association!

11:10 - 'About the European researchers community in Japan: (some) results from the EURAXESS Survey of European Researchers in Japan'

Dr. Matthieu PY, EURAXESS Japan

11:20 - Pitch of national researchers associations in Japan: Sciencescope (Fra), German JSPS Alumni Association (Ger), ACEJapon (Spa), Italian Researchers in Japan (Ita), NORAlumni Japan (Nor)

11:30 - Discussion panel with the presidents of the associations:

'Why, How, What: practical aspects of the foundation of a European researchers association in Japan'

- Dr. Thomas SILVERSTON, *Sciencescope* (French speaking, sciencescope.org)
- Prof. Dr. Heinrich MENKHAUS, *German JSPS Alumni Association* (German speaking, jspm-club.de)
- Dr. Susana DE VEGA, *ACEJapon* (Spain, acejapon.wordpress.com/)
- Dr. Sarah COSENTINO, *Italian Researchers in Japan* (Italy, [Facebook group](#))
- Dr. Svein GRANDUM, *NORAlumni Japan* (Norway, japan.noralumni.no/)

(moderator: EURAXESS Japan)



Deutsche Gesellschaft der JSPS-Stipendiaten e.V.
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ドイツ語圏日本学術振興会研究者同窓会





Special Session B:

Horizon 2020 for EU-Japan research cooperation projects: overview and experience feedback

15:00 - Cooperation opportunities through EU's Horizon 2020 research and innovation programme

Dr. Tom KUCZYNSKI, EU Delegation to Japan, S&T Section

15:15 - Experience feedback on setup and running of the two EU-Japan collaborative Horizon 2020 projects JENNIFER and E-JADE

Prof. Morgan WASCKO, Imperial College London; Spokesperson, T2K collaboration

<http://t2k-experiment.org/t2k/collaboration/> | <http://www.jennifer-project.eu/> | <https://www.e-jade.eu/>



Delegation of the European Union to Japan

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Special Session C: European Researchers in Japan: Career Paths and Future Opportunities

17:40 - JSPS Postdoctoral Fellowship for Research in Japan: A Short introduction of the program and possible career paths after the fellowship (JSPS)

Mr. Yuji IIZUKA, Overseas Fellowship Division, International Program Department, JSPS

17:50 - Career opportunities for European researchers in Japan through the JREC-IN Portal (JST)

Ms. Kaoru OGANE, Department of Databases for Information and Knowledge Infrastructure, Japan Science and Technology Agency (JREC-IN)

18:00 - Opportunities for Research Mobility to Europe under Horizon 2020 programme (EU Delegation)

Dr. Tom KUCZYNSKI, EU Delegation to Japan, S&T Section

Feedback session:

18:10 - Taking the Tenure Track in Japan

Dr. Richard CULLETON, former JSPS postdoctoral fellow, tenured Assistant Professor at Nagasaki University,

18:20 - Returning to Europe after 7 years of research in the United States and Japan

Dr. Isabelle VEA, University of Edinburgh, former JSPS postdoctoral fellow, (future) Marie Skłodowska-Curie fellow, Reintegration Panel of the European Fellowships

18:30 - The birth and scope of the BrainConquest ERC starting grant project

Dr Fabien LOTTE, Visiting researcher at RIKEN; Research Scientist at Inria Bordeaux Sud-Ouest (France), new ERC Starting Grant awardee



Marie Skłodowska-Curie
Actions



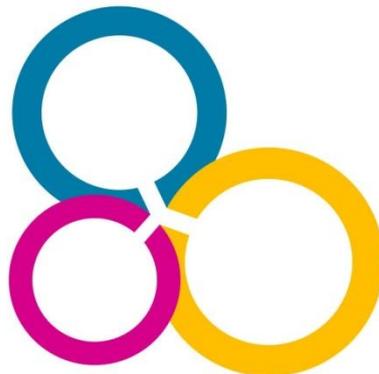


European Research Day

25 November 2016 | Delegation of the European Union to Japan, Tokyo



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