



## HIROSHIMA UNIVERSITY UPDATE

June 2017

### News

#### The School Of Informatics and Data Science & Department Of Integrated Global Studies At The School Of Integrated Arts and Sciences Are Expected To Be Opened in 2018

With “the Fourth Industrial Revolution” causing socio-economic changes and rapid implementation of globalization, coupled with the arrival of society faced with substantial population decrease, universities are now being asked to play an even more important role as core institutions for cultivating human resources and as centers of activities for intellectual creation.

Having been selected as one of the universities with “A Program for Enhancing Research Universities” and “The 13 Type A (Top Type) universities under the FY2014 Top Global University Project,” Hiroshima University has been committing itself to become a research university to be ranked in the Top 100 Universities in the World University Rankings within the next ten years, by promoting thorough “university reform” and “globalization.”

Under such circumstances, Hiroshima University intends to re-examine the undergraduate education with a view to enhancing the function as a national center institution representing Japan and leading the world and as a regional center institution in the Chugoku-Shikoku District. By re-allocating existing resources, we are going to newly establish the School of Informatics and Data Science & the Department of Integrated Global Studies at the School of Integrated Arts and

Sciences, and to reorganize the School of Engineering.

The original article:

<https://www.hiroshima-u.ac.jp/en/news/39006>

School of Informatics and Data Science (Japanese Page):

<https://www.hiroshima-u.ac.jp/ids>

#### Department of Integrated Global Studies

At the Department of Integrated Global Studies, the School of Integrated Arts and Sciences, it is expected that home students whose mother tongue is Japanese and international students whose mother tongue is not Japanese study together. The official language used at the Department is English, while all the classes are also conducted in English.

The Department’s admission information for international students is available on the Department’s website. The Department is still in the planning stage and the content is subject to change.

Department of Integrated Global Studies, School of Integrated Arts and Sciences:

<https://www.hiroshima-u.ac.jp/en/igs>



**“Everything that I thought was obvious or normal, wasn't really obvious or normal.”**

That’s what Japan taught me when I came here as an exchange student from Germany many years ago. New discoveries in the world start from questioning your own beliefs and opinions. All of you who are curious about the world, why don’t you come to IGS? Let us build the capacity to search for new ways of thinking, to connect with other people, to think in an integrative manner and to imagine the world together in order to start acting!

Carolin Funck, IGS Department Head

## Recent Topics

### Hiroshima University was ranked in the 10<sup>th</sup> place among Japanese universities in the Reuters Top 75: Asia Pacific's Most Innovative Universities

Hiroshima University was ranked at the 10<sup>th</sup> place among universities in Japan (came 29<sup>th</sup> in the entire universities in the region) for the Reuters Top 75: Asia Pacific's Most Innovative Universities which was announced on June 7th, 2017.

The Reuters Top 75: Asia Pacific's Most Innovative Universities identifies the top 75 educational institutions that are doing the most to advance science, invent new technologies, and help drive the global economy. It was produced using the data of universities' patents and academic papers compiled by the IP & Science division of Thomson Reuters.

Hiroshima University was ranked in the 10<sup>th</sup> among Japanese universities (came 26<sup>th</sup> in the entire universities in the region) last year when the ranking was announced for the first time. We will continue to commit ourselves to more high-quality education and research towards realizing to be ranked within the Top 100 Universities in the World University Rankings.

Institution	National Rank	Asia Rank
University of Tokyo	1	3
Tohoku University	2	7
Kyoto University	3	8
Osaka University	4	9
Tokyo Institute of Technology	5	12
Keio University	6	16
Kyushu University	7	17
Hokkaido University	8	22
Nagoya University	9	24
<b>Hiroshima University</b>	<b>10</b>	<b>29</b>
Tokyo Medical & Dental University (TMDU)	11	36
Kumamoto University	12	37
University of Tsukuba	13	38
Shinshu University	14	44
Kanazawa University	15	47
Chiba University	16	48
Okayama University	17	52
Waseda University	18	66
Kobe University	19	72

Top 75: Asia Pacific's Most Innovative Universities

The relevant ranking details:

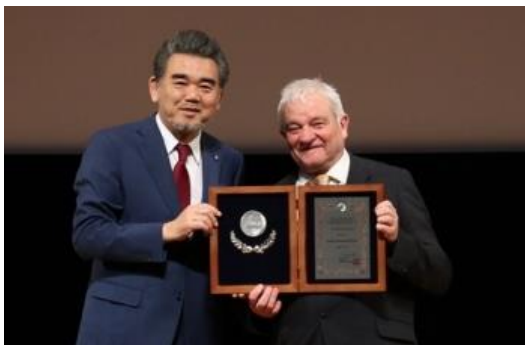
Asia Pacific's Most Innovative Universities - 2017

<http://www.reuters.com/article/us-asiapac-reuters-ranking-innovative-un-idUSKBN18Y24R>

### Nobel Laureate Sir Paul Nurse at Satake Hall: Don't let failure hold you back



Sir Paul Nurse



Sir Paul Nurse (on the right) and President Mitsuo Ochi (on the left)

Sir Paul Nurse visited Higashihiroshima Campus April 5 to take part in the "From Hiroshima University to the World" lecture series.

A packed Satake hall witnessed the former president of Britain's Royal Society outline his life and research up to receiving the Nobel Prize for discovering the genetic control of cell division in 2001.

In an oration threaded throughout with humor and inspiration Sir Paul relayed a series of setbacks spanning five decades that only helped push him on to ever greater things. These included a lack of language skills barring his access to university, unfortunate experiences collecting sea animals on cold British coasts, an unsuccessful Phd project, and experiments that never seemed to produce the correct outcome!

With a young family to care for and a lack of job prospects due to his research conflicting with contemporaneous scientific orthodoxy, he wondered if he should abandon it all together.

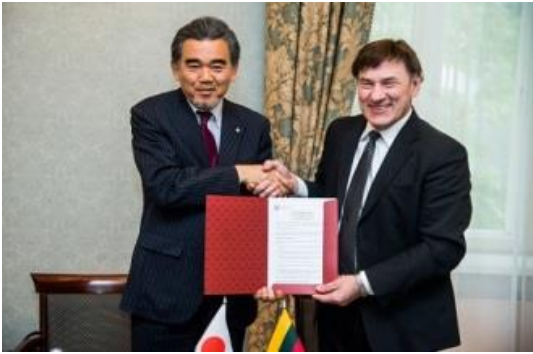
But the long hours spent observing yeast cells clearly payed off for the renowned geneticist who told his captivated audience:

"If you fail at things do not get depressed and disappointed, just keep carrying on because you can make a success of it. I failed often and it didn't hinder me."

An Interview with Sir Paul Nurse:

<https://www.facebook.com/HiroshimaUniversityResearch/videos/495910687468854/>

## Hiroshima University concluded an inter-university agreement with Vytautas Magnus University in Lithuania, and established the Hiroshima University Lithuania Center there.



President Augutis (on the right) and President Ochi (on the left), holding the agreement (Photo provided by Vytautas Magnus University)

The original article:

<https://www.hiroshima-u.ac.jp/en/news/39529>

Centers attached to Executive Offices:

<https://www.hiroshima-u.ac.jp/en/centers/executivecenters>

On May 8, 2017, Hiroshima University (HU) concluded an inter-university agreement with Vytautas Magnus University (VMU) in Lithuania. HU President, Mitsuo Ochi, visited VMU and signed the agreement in the presence of VMU President, Juozas Augutis. In addition, the Hiroshima University Lithuania Center was established in the premise of the Centre for Asian Studies at VMUs.

After the signing ceremony, HU Dr. Sato (Executive and Vice President) gave a lecture to those students studying Japanese language at VMU on “kanji” (Chinese characters), which is one of the challenges the learners of Japanese may face if they are from the countries where the writing systems are not based on *kanji*, and are at a loss how to improve their writing skills in Japanese .

In addition to the inter-university agreement, an agreement for student exchange was also concluded between the two universities. Hiroshima University is determined to develop academic exchange with Vytautas Magnus University by implementing short-term study and exchange programs for students as well as researchers.

## Inauguration Ceremony for the Cambodia MoEYS-Hiroshima University Collaboration Center



Group photo



Address by H.E. Dr. HANG Chuon Naron, Minister for Education, Youth and Sport, Cambodia



Address by Dr. Makoto Miyatani, Executive and Vice President, HU

On 29<sup>th</sup> March 2017, the Inauguration Ceremony for the Cambodia MoEYS-Hiroshima University Collaboration Center was held at the Directorate General of Higher Education, Ministry of Education, Youth, and Sport (MoEYS).

Among the participants at the ceremony were Cambodia’s Minister of Education, the Ambassador Extraordinary and Plenipotentiary of Japan to Cambodia, Cambodian government officials, university representatives of our partner institutions in Cambodia, and Dr. Makoto Miyatani, Executive and Vice President of Hiroshima University. Dr. Miyatani said in his address at the ceremony, “We believe that the future promotion of our academic exchanges with the MoEYS as well as with higher education institutions in Cambodia will be an important mission for all of us. We are convinced that this newly established center will directly serve the purpose and play a pivotal role in supporting the university’s activities in Cambodia.”

Hiroshima University and the MoEYS concluded a Memorandum of Understanding for Academic Exchanges and Cooperation in March 2016, which led to the establishment of this new center. Hiroshima University is the first university among Japanese universities that has entered into this type of agreement with the MoEYS.

With the opening of this center, Hiroshima University will further promote academic and student exchanges, aiming to grow into the University of World-wide Repute and Splendor for Years into the Future.

The original article:

<https://www.hiroshima-u.ac.jp/en/news/39269>

## Inter-university Agreement between Hiroshima University and the Instituto Politecnico Nacional (Mexico)

On February 28, 2017, Hiroshima University (HU) concluded an inter-university agreement with the Instituto Politecnico Nacional (IPN), Mexico. On that day, after visiting the IPN, HU President Mitsuo Ochi and Professor Enrique Fernández Fassnacht, General Director of IPN, together signed the agreement.

Prior to the signing ceremony, President Mitsuo Ochi, Hiroshima University, gave a lecture on knee joint surgery to the faculty members and students in the field of Medicine at the IPN.

In addition to the inter-university agreement, the two universities also concluded a student exchange agreement. It is expected that researcher and student exchanges between HU and IPN will continue to expand.



HU President Ochi and IPN Rector Enrique Fernández Fassnacht

## Research News

### 100% natural, 100% gluten free - get ready for the battle of the grain! Gluten free rice-flour bread could revolutionize global bread production.

The research group of Dr. Masumi Villeneuve, Associate Professor at Hiroshima University, and Japan's National Agriculture and Food Research Organization (NARO) developed a technique for making gluten-free 100% rice bread\*.

While rice-flour breads are not new, until now their consistencies lacked the familiar bubble structure and volume found in wheat-flour bread – or this bubble structure has been artificially induced through additives.

This new rice bread is 100% natural and has a similar consistency expected by consumers used to wheat breads.

Good news for celiac sufferers and people who wish to avoid gluten in their diets!

Should producers see the benefits of gluten-free rice flour it could conceivably shift global grain production from the prairies and steppes of the world to the paddy fields of Asia.

This would contribute to increased rice exports at a time when consumption of the staple has decreased with the adoption of western dietary habits – including ironically the eating of more bread!

\*The main ingredient except water, yeast, sugar, salt, fat and oil is 100% rice flour .

Full bibliographic information:

Authors: Hiroyuki Yano, Akiko Fukui, Keiko Kajiwara, Isao Kobayashi, Koh-ichi Yoza, Akiyoshi Satake, Masumi Villeneuve

Title: Development of gluten-free rice bread:

Pickering stabilization as a possible batter-swelling mechanism

Journal: LWT - Food Science and Technology, 2017; 79: 632

DOI: 10.1016/j.lwt.2016.11.086

Profile of Associate Professor Masumi Villeneuve

<http://seeds.office.hiroshima-u.ac.jp/profile/en.9607f6d2ceb01035520e17560c007669.html>

The full paper is available from the following link:

<https://www.hiroshima-u.ac.jp/en/news/38764>



Successful Rice Flour Bread

## Lecture Event Inviting Professor Michael Quante, the University of Münster



On the left: Professor Hiroshi Gotou, Graduate School of Letters. On the right: Professor Michael Quante, Vice President of the University of Münster.

On 9<sup>th</sup> and 10<sup>th</sup> April this year, Hiroshima University Project Research Center for Applied Ethics held a two-day lecture event to explore the following theme of the possibilities of forgiving war crimes or other similar crimes. To this event, Professor Michael Quante at the University of Münster was invited from Germany. During the event, Professor Quante gave a talk entitled “Unforgivable on Principle?” and also a lecture entitled “Personal or objective Dignity: Dimensions and Deficiencies of Kantian Concept of Dignity,” providing an opportunity for active discussions among the participants. Through attending the event, the participants were able to deepen their understanding on the validity of the concept of person as well as the autonomy concept to the modern issues and also their limitations.

Profile of Professor Hiroshi Gotou

<http://seeds.office.hiroshima-u.ac.jp/profile/en.12c9d1636a698ec9520e17560c007669.html>

## Overseas Teaching Practicum by Hiroshima University Graduate Students

The Hiroshima University Global Partnership School Center (GPSC), at the Graduate School of Education, has been holding an overseas teaching practicum annually for education-major graduate students to develop into globally-minded future teachers. Since 2006, this project has been assigned as an elective subject in the curriculum of the Graduate School of Education, and the year 2016 marked the 10-year anniversary of this project. So far over 100 students have joined in the teaching practicum in the US, conducting lessons in English at four local public schools in North Carolina. This year, 12 students and four faculty will participate in teaching at three local elementary/middle schools there. This project has been made possible with a strong partnership under a Mutual Exchange Agreement with East Carolina University, U.S.A.

The project has the following three aims for participants: 1) to develop practical instructional competence by teaching pupils with different cultural backgrounds; 2) to enhance abilities in developing teaching materials through hands-on teaching experiences in English; and 3) to acquire the abilities to design, implement and evaluate programs for promoting global partnership. Teaching by Japanese students has always been a topic of interest for local media, TV and newspapers. One lesson regarding traditional Japanese footwear, or ‘geta’, was covered by The Daily Reflector, a local newspaper, with the title "Students 'geta' kick out of Japan." Discussion with university educators and local school teachers further helped to broaden young Japanese teachers’ global awareness, understanding of American and Japanese culture, and confidence in teaching in English.

The researchers at GPSC have been working on various independent and collaborative research projects to strengthen the global partnership between Japan and the United States. One of them is to hold an International Forum on School Exchanges every July, and every year some school teachers and university researchers are invited from the U.S.A. for a symposium on the considerable impact of overseas teaching practicum for teacher education in a new global era. The GPSC has been proud of hosting this forum for the past 13 consecutive years as of 2017.



Classroom discussion with the students of East Carolina University, U.S.A.



Teaching Japanese culture at a local elementary school in North Carolina, U.S.A.

The project will continue to develop and foster educational leaders who can promote global partnership in the future, whether they be students, teachers or other educators. With globalization proceeding at such a rapid pace, there is an urgent need for the development of more programs like this one. We believe that developing leaders capable of global impact will contribute to the realization of a global support system for world peace.

<http://home.hiroshima-u.ac.jp/gpsc/english/index.html>

## Learn English with Our Podcasts: Anytime and Anywhere

### 294 - Japan's Tattoo Dilemma

June 02, 2017



This week's English News Weekly podcast reports on a dilemma facing the Japanese Government...How to accommodate foreign visitors who have tattoos. This potential problem is a reflection on cultural sensitivities in Japan that associate tattooing with organised crime. This means that tattooed people are banned from places such as public baths and hot springs. Yet with Japan set to host two massive sporting events the dilemma is - what to do with these tattooed visitors? How will this problem be solved?

English News Weekly will try to explain all... (PDF)

 Download MP3

A screenshot from the English News Weekly website

Hiroshima University is a leader in utilizing mobile technologies in English education. The Institute for Foreign Language Research and Education (FLaRE) has been developing and delivering original English podcasts since 2008. More than 700 episodes have been published, helping students with different interests and abilities. The podcast topics range from daily conversations to dramas, and from cross-cultural discussions to hot topics in the news. Amongst the ongoing research projects involving these podcasts are: Comparing the effects of classroom instruction using paper-based textbooks with those involving podcasts, and integrating podcasts into ePortfolios where each student can set his/her achievement goals.

Hiroshima University's English Podcast:

<http://pod.flare.hiroshima-u.ac.jp/>

English News Weekly:

<http://pod.flare.hiroshima-u.ac.jp/cms/enw.php>

Institute for Foreign Language Research and Education:

<https://www.hiroshima-u.ac.jp/en/flare>

## Understanding money reduces worry about old age

In a recent research, Dr. Yoshihiko Kadoya, Associate Professor at the Graduate School of Social Sciences and Director of the Hiroshima Institute of Health Economics Research, Hiroshima University, and Mr. Mostafa Saidur Rahim Khan, PhD Candidate, Nagoya University, have determined important factors to help reduce anxiety about life in old age, from a nationwide questionnaire survey. It has revealed that having a greater financial literacy can facilitate making appropriate decisions for savings and investment as well as a greater perception for predicting risks.

People who possess a greater understanding of finance are less likely to fret about life in their twilight years. According to a new study from Associate Professor Yoshihiko Kadoya, Graduate School of Social Sciences, Hiroshima University, the ability to understand how money works, enables people to accumulate more assets and income during their lifetime, and so increases confidence for the years ahead. It also engenders a greater perception for risk and enables those who have it to face off later-life's dilemmas with ease.

This study, published online on Journal of Risk Research on April 13th, 2017, was ranked among the top 5% of all research outputs ever tracked by Altmetric.

The full story (press release) :

<https://www.hiroshima-u.ac.jp/en/news/39123>

Profile of Associate Professor Yoshihiko Kadoya

<http://seeds.office.hiroshima-u.ac.jp/profile/en.46c8fdf9559708bc520e17560c00769.html>

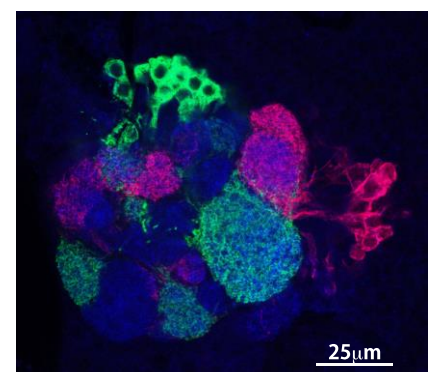
<http://home.hiroshima-u.ac.jp/~ykadoya/>

Hiroshima Institute of Health Economics Research

<http://hiher.hiroshima-u.ac.jp/en/>

## How to segregate functionally distinct neural circuits in the brain

How wiring specificity of neural circuits is achieved is a fundamental question that must be answered in order for us to understand how functional neural networks are formed. Especially, it remains unclear how similar but functionally distinct neurons are properly segregated in tightly packed neural circuits such as brain. The research group led by Professor Takahiro Chihara, Graduate School of Science, Hiroshima University, utilized the sophisticated genetic methods of *Drosophila* fruit fly and found that Eph/Ephrin signaling organizes the segregation of pheromone-sensing neural circuits not to intermingle with the other odor-related circuits.



The figure represents the segregation of functionally distinct dendritic processes (green and red) in the antennal lobe, the first olfactory center of *Drosophila*. Blue indicates presynaptic regions.

Reference:

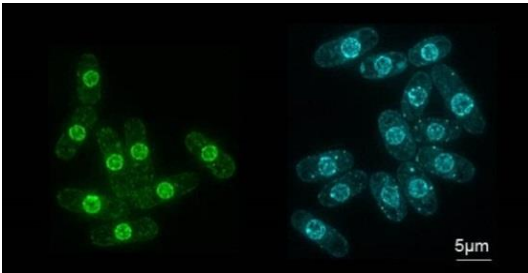
M. Anzo, S. Sekine, S. Makihara, K. Chao, M. Miura and T. Chihara. "Dendritic Eph organizes dendrodendritic segregation in discrete olfactory map formation in *Drosophila*"

Genes and Development 31:1054-1065, 2017

Profile of Professor Takahiro Chihara:

<http://seeds.office.hiroshima-u.ac.jp/profile/en.d87fd3f8cd875359520e17560c007669.html>

### Nucleocytoplasmic transport and membrane growth in nuclear size control



Nuclear envelope in wild-type (green) and nuclear size mutant (cyan) of fission yeast cells.

How cells control the overall size of membrane-bound organelles is an unanswered question of cell biology. The nucleus is generally a single copy within a cell and provides a useful model to study organelle size homeostasis. To understand mechanisms of nuclear size control, Assistant Professor Kazunori Kume (Hiroshima University) and his collaborators, Sir Paul Nurse and his lab members (The Francis Crick Institute) have conducted a genome-wide screen for gene deletion mutants with altered nuclear size, using the fission yeast as a eukaryotic model organism.

Molecular and genetic analysis of the mutants revealed that defects in both nucleocytoplasmic mRNA transport and lipid synthesis altered nuclear size. We proposed that properly regulated nucleocytoplasmic transport and nuclear membrane expansion are central to nuclear size control during cell growth and division. Our findings can contribute to understand not only how cells regulate their membrane-bound organelles but also diseases associated with abnormal nuclear size.

The full paper is available from the following link: <http://journals.plos.org/plosgenetics/article?id=10.1371/journal.pgen.1006767>

Profile of Assistant Professor Kazunori Kume <http://seeds.office.hiroshima-u.ac.jp/profile/en.ea18e48d41ddec8c520e17560c007669.html>

Hiroshima Research Center for Healthy Aging: <http://hiha.hiroshima-u.ac.jp/en/>

### Maturation of tissue domains for proper integration of the musculoskeletal system is regulated by Scleraxis

Tendons and ligaments connect bone to muscle and one bone to another piece of bone (Fig. 1). Without proper connections by tendons and ligaments, sometimes through cartilaginous attachment sites, contraction force generated by muscle could not be transmitted to bone and the musculoskeletal elements would not be integrated into a functional organ unit to assure our moving capability of body.

However, very little attention has been paid to a molecular mechanism of the formation of such tissues until recently.

Taking advantage of genetically modified mice, the research group led by Professor Chisa Shukunami demonstrated that Scleraxis, a basic helix-loop-helix transcription factor, is necessary for maturation of not only tendons and ligaments but also their cartilaginous attachment sites.

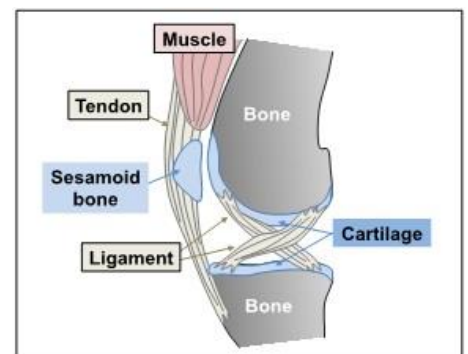


Fig. 1. Illustration of the knee joint.

Reference

Yuki Yoshimoto et. al. Scientific Reports. 7:45101, 2017.

doi:10.1038/srep45010

Profile of Professor Chisa Shukunami

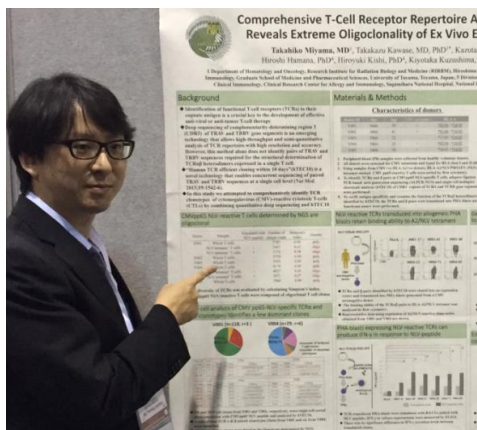
<http://seeds.office.hiroshima-u.ac.jp/profile/en.6c6985761a068f58520e17560c007669.html>

## Development of a technology to identify T cells harboring highly functional T-cell receptor using next generation sequencing and single cell cloning

Human immune cells are highly sensitive to radiation damage that induces dose-dependent apoptosis of lymphocytes and prevents hematopoietic organs from producing immune cell precursors. To restore T-cell-mediated immunity in immunodeficient patients and radiation victims, the Department of Hematology and Oncology at the Research Institute for Radiation Biology and Medicine is attempting to develop a novel technology to generate T-cell-receptor (TCR) gene-transduced T cells for adoptive cellular immunotherapy. Recently, by using cytomegalovirus (CMV) pp65 as a model antigen, we comprehensively identified TCR clonotypes dominantly reactive with HLA-A\*02-restricted CMV pp65 antigen at an

individual level using next generation sequencing and single cell cloning.

T cells transduced with these CMV-reactive TCRs can efficiently recognize HLA-A\*02/pp65 and produce interferon-gamma in an antigen-dependent manner (Miyama T, et al., *Sci Rep* 2017). Our technology clearly opens a new avenue for selecting highly functional TCRs for anti-viral or anti-tumor cellular therapy. (A part of this work achieved 2015 Annual Meeting of the American Society of Hematology Abstract Achievement Award.)



### Reference:

Miyama T, et al. *Scientific Reports*. 7:3663, 2017.  
doi:10.1038/s41598-017-03855-x

Profile of Professor Tatsuo Ichinohe

<http://seeds.office.hiroshima-u.ac.jp/profile/en.41d916baf883a124520e17560c007669.html>

Profile of Assistant Professor Takakazu Kawase

<http://seeds.office.hiroshima-u.ac.jp/profile/en.d52de8fd7edef2d5520e17560c007669.html>

## Design of a Data-Oriented KANSEI Feedback Control System - Challenges for Controlling 'KANSEI' -

In Japan, the level of happiness is considered low despite the Gross Domestic Product (GDP) being high, and a wide gap separates "material wealth" related to GDP and "mental wealth" related to the level of wellbeing (Survey by the Cabinet Office(2003)). To fill this gap, materials which surround us should be managed in a way that enhances material richness according to human feelings. Researchers at the Center of KANSEI Innovation(COI) on nurturing mental wealth, Hiroshima University, are tackling the challenge of controlling human feelings.

Specifically, focusing on mobility support equipment, we are examining the structure of a KANSEI Control System that adaptively adjusts the degree of support based on the feelings (such as comfort, discomfort etc.) of the person. When doing this, human non-linearity is a problem, but we resolved this problem by applying "data-driven control", which we developed in our laboratory.

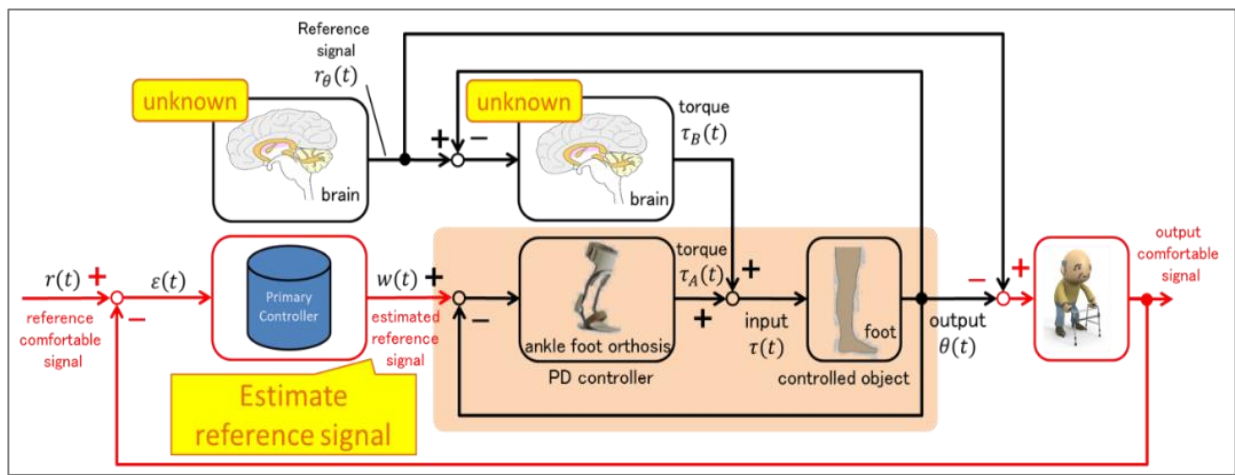
Specifically, we stored all the information that impacts feelings (such as body temperature, air temperature, time, device output, etc.) in a data-base and built a cascade control system that generates the target values of the device in order to realize the target feeling.

Taking the mobility support device, an ankle-foot orthosis, as the sample device, we generated the target ankle angle for the ankle-foot orthosis to satisfy the desired degree of comfort as shown in Figure 1. The details of this research have been published in the following paper, earning the Young Author Award at ICAROB 2017 (The 2017 International Conference on Artificial life and Robotics).



This research won the Young Author Award in ICAROB 2017.





Block diagram of the data-oriented KANSEI feedback control system.

Reference:

T. Kinoshita and T. Yamamoto: Design of a Data-Oriented Kansei Feedback Control System, Journal of Robotics, Networking and Artificial Life, Vol. 4, No. 1, pp.14-17 (2017)

Profile of Professor Toru Yamamoto

<http://seeds.office.hiroshima-u.ac.jp/profile/en.dacf83b2a0108dbd520e17560c007669.html>

Center of KANSEI Innovation

<http://coikansei.hiroshima-u.ac.jp/en/>

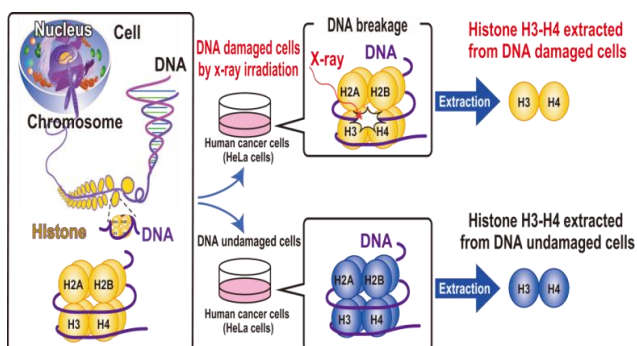
## DNA damage response induces histone structural alterations

DNA damage induced by radiation exposure causes harmful mutations in genomes and critical diseases such as cancer. Histone proteins, around which DNA wraps, play important roles in the DNA-damage repair process. To clarify the structural alteration of histones in the process, researchers at the Hiroshima Synchrotron Radiation Center ran synchrotron-radiation circular dichroism spectroscopy at the said center, in collaboration with National Institutes for Quantum and Radiological Science and Technology and Ibaraki University. We found that histones extracted from DNA-damaged cells formed different

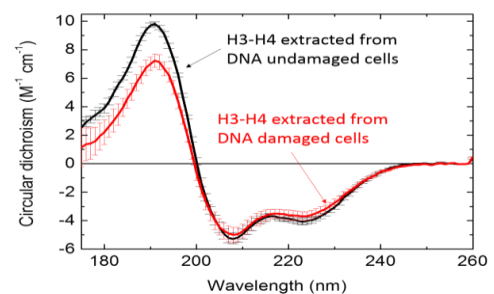
steric structures in solution compared with those extracted from undamaged cells. It provides an important clue to understand the DNA-damage repair processes.

Reference:

Y. Izumi, K. Fujii, S. Yamamoto, K. Matsuo, H. Namatame, M. Taniguchi, and A. Yokoya, "DNA damage response induces structural alterations of histone H3-H4," Journal of Radiation Research, 58, 59-65 (2017). DOI: 10.1093/jrr/rww086



To study the DNA repair process, we extracted histone H3 and H4 proteins from the DNA damaged cells by x-ray irradiation.



Observation of structural alternation of histones in the DNA repair process.

Profile of Assistant Professor Yudai Izumi

<http://seeds.office.hiroshima-u.ac.jp/profile/en.138c038a163e3911520e17560c007669.html>

Associate Professor Koichi Matsuo

<http://seeds.office.hiroshima-u.ac.jp/profile/en.76158b13652f571b520e17560c007669.html>

## Collaboration with Mexico

Hiroshima University (HU) has taken steps to strengthen international relationship with universities in Mexico, in a wide range of fields including industry-academia-government collaboration. In February 2017, HU co-hosted two joint seminars regarding alternative energy

and environmental protection with the Institution Politécnico Nacional (IPN) in Mexico City and with the University of Guanajuato in Guanajuato.



Audience at IPN General Lázaro Cárdenas del Río Hall

During the seminar, our professors and representatives from industry gave lectures, and the venues were at full capacity with researchers and students from universities and industries. In addition, on March 1, the “Hiroshima University Guanajuato Centre” was established at the University of Guanajuato as our base in Mexico.

With all of these developments, we expect further progress in Japan-Mexico academic exchange, including the exchange of students and researchers between HU and the University of Guanajuato.

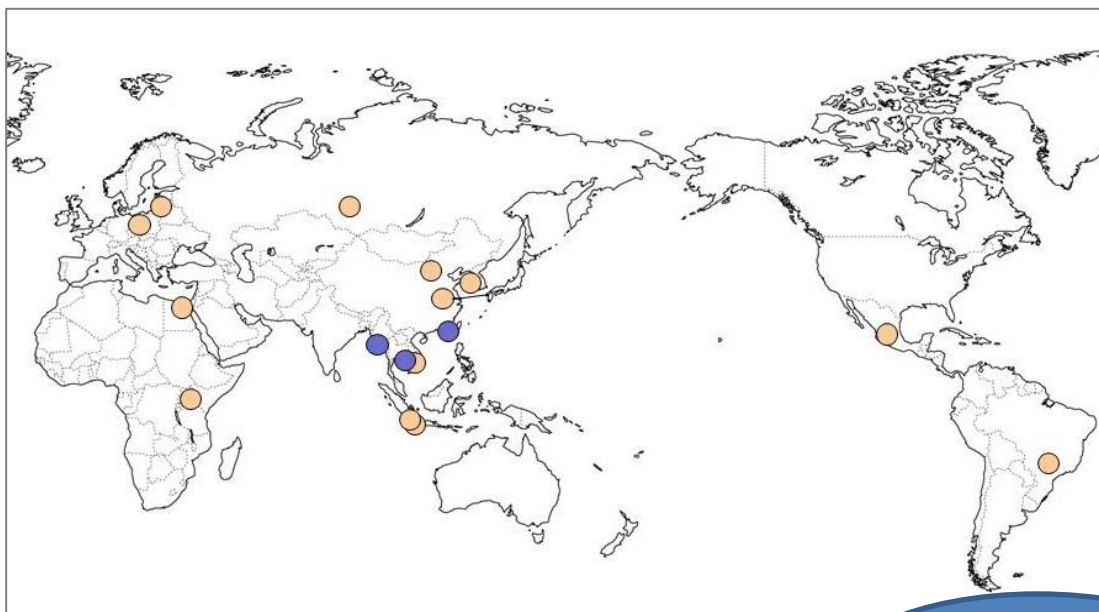


Hiroshima University President Ochi and University of Guanajuato Rector Luis Felipe Guerrero Agripino

The original article:

<https://www.hiroshima-u.ac.jp/en/news/38737>

## Overseas Bases



Link for the details:

<https://www.hiroshima-u.ac.jp/en/international/network/bases>

Overseas Bases

16

## Awards

### Hiroshima University Professor wins the Ethno-Arts Society Award for his book on aesthetics of Irish cinema and culture

On 22<sup>nd</sup> of April 2017, Dr. Hideki Kuwajima, Professor of Aesthetics and Philosophy at Graduate School of Integrated Arts and Sciences, Hiroshima University, received the 14<sup>th</sup> Shigenobu Kimura Award, along with the prize money of 500,000 yen, from the Society for Ethno-Arts, Japan. He was awarded for the publication of his 2<sup>nd</sup> book on aesthetics of Irish cinema and the Celtic sensibility, "*Sei to Shi no Keruto-bigaku: Airurando-eiga ni yomu Yōroppa-bunka no Kosou*" (Aesthetics of the Irish-Celtic concerning the Life and Death: the Older Layer of European Culture in Irish Films ), from Hosei University Press (Tokyo), in

September 2016. The Society for Ethno-Arts was founded in 1983 by the late Professor Shigenobu Kimura, who was famous world-wide as a historian on the prehistoric art and critic on the contemporary art.



Professor Kuwajima receiving the award from the President of the Society for the Ethno-Arts (At the 33th Annual Conference of the Society held in Naruto University of Education, Tokushima, on April 22<sup>nd</sup>, 2017).



The Award-Winning Book written by Professor Kuwajima

Profile of Professor Hideki Kuwajima

<http://seeds.office.hiroshima-u.ac.jp/profile/en.b7d3137636244a39520e17560c007669.html>

# Schools and Graduate Schools

## Schools

For undergraduate level, Hiroshima University consists of 11 schools which provide undergraduate courses including majors in the natural sciences, humanities, the social sciences, and many others.

School of Integrated Arts and Sciences  
School of Letters  
School of Education  
School of Law  
School of Economics  
School of Science  
School of Medicine  
School of Dentistry  
School of Pharmaceutical Sciences  
School of Engineering  
School of Applied Biological Science

School Of Informatics and Data Science  
(To Be Opened in 2018)

## Graduate Schools

Graduate level studies at Hiroshima University consist of 11 graduate schools including Education, Biomedical & Health Sciences, Engineering, and many other majors. In addition, two unique program offerings: "The Phoenix Leader Education Program for Renaissance from Radiation Disaster" and "The Taoyaka Program for Creating a Flexible, Enduring, and Peaceful Society", combine graduate level academic coursework with integrative research components.

Graduate School of Integrated Arts and Sciences  
Graduate School of Letters  
Graduate School of Education  
Graduate School of Social Sciences  
Graduate School of Science  
Graduate School of Advanced Sciences of Matter  
Graduate School of Biomedical & Health Sciences  
Graduate School of Engineering  
Graduate School of Biosphere Science  
Graduate School for International Development and Cooperation  
Hiroshima University Law School

## Advanced Course

Special Education Major Program

## Interdisciplinary Graduate Educational Program

Phoenix Leader Education Program (Hiroshima Initiative) for Renaissance from Radiation Disaster (adopted by MEXT), TAOYAKA PROGRAM for creating a flexible, enduring, peaceful society (adopted by MEXT) and Education Program for Global Environmental Leaders.



Please visit our website for more details!

About Schools and Graduate Schools

<https://www.hiroshima-u.ac.jp/en/schools>

About Resercher Interviews etc.

<https://www.hiroshima-u.ac.jp/en/research>

# Education

## Student and Faculty Numbers

Undergraduate Students 10,887 (As of May 1, 2017)

Graduate Students 4,520 (As of May 1, 2017)

Academic Faculty Members 1,726 (As of May 1, 2017)

## Networks and Overseas Bases

### Overseas Bases

HU has established overseas bases in 14 countries/regions (As of May, 2017)

Number of Overseas Bases 16 (As of May, 2017)

### International Exchange Agreements (As of May 23, 2017)

University-level: 247 Agreements with 226 Organizations in 46 Countries/Regions

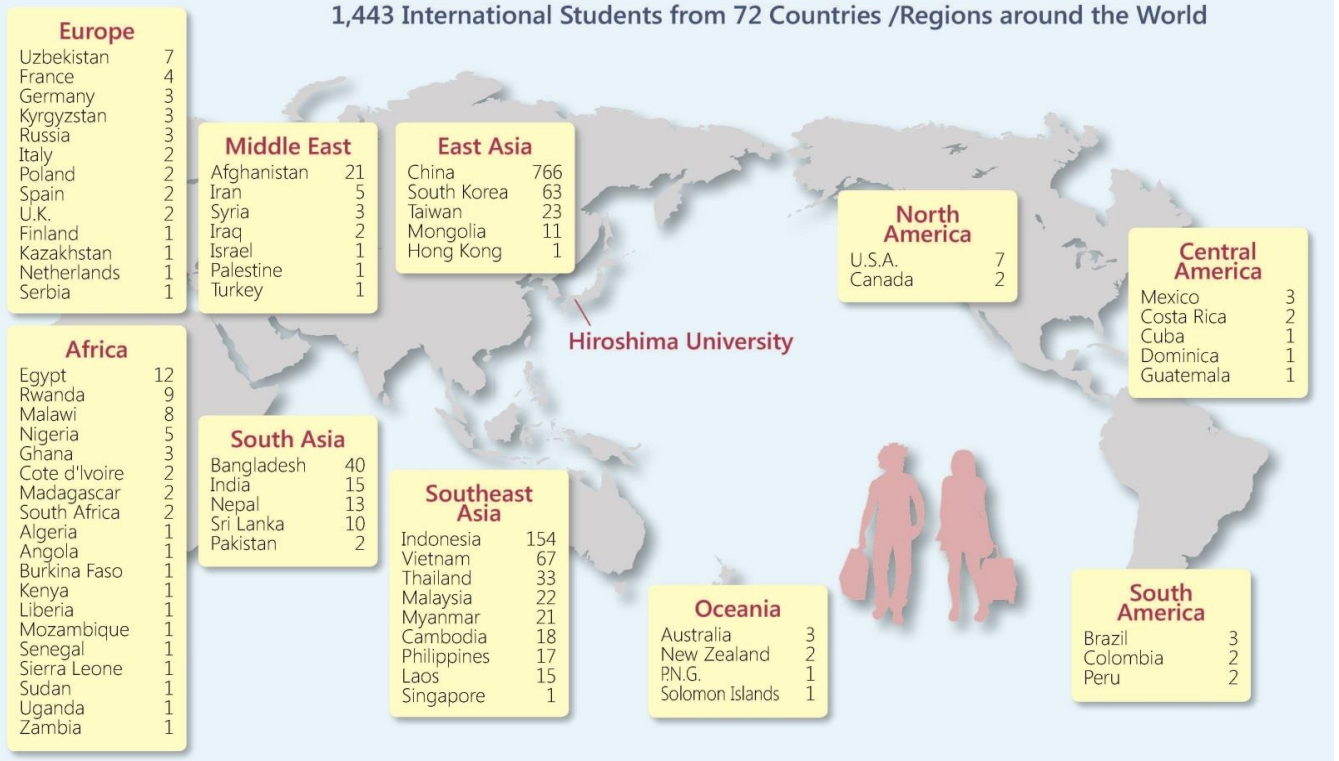
Faculty / Department-level: 333 Agreements with 307 Organizations in 50 Countries/Regions

## International Exchange

Number of International Students 1,443 from 72 Countries/Regions (As of May 1, 2017)

### 留学生数 (2017年5月1日現在) Number of International Students (As of May 1, 2017)

1,443 International Students from 72 Countries /Regions around the World



<https://www.hiroshima-u.ac.jp/en>



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