



**KUIAS**

2024

**K**YOTO  
**U**NIVERSITY  
**I**NSTITUTE FOR  
**A**DVANCED  
**S**TUDY



KYOTO UNIVERSITY





# Wide-Open Window for Intellectual Exchange

Kyoto University Institute for Advanced Study

## Philosophy & purpose of KUIAS

In the spirit of Kyoto University's tradition of academic freedom, KUIAS conducts advanced research utilizing the strengths of the University. Preminent researchers from Japan and overseas gather at its international research centers.

As a leading institute of Kyoto University, KUIAS has a system in which researchers with excellent achievements and next-generation researchers can practice high-level research activities, no matter what field they are from.

Through high-level research activities, KUIAS contributes to nurturing young researchers, returning research benefits to society, and promoting science internationally.



Kyoto University

## Award-Winning Research

**Fields Medal (1990)**  
Shigefumi Mori



**Nobel Prize in Physiology or Medicine (2018)**  
Tasuku Honjo



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**Chern Medal (2018)**  
Masaki Kashiwara



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**Lasker Award (2014)**  
Kazutoshi Mori



### Kyoto Prize

- 2016 Tasuku Honjo
- 2016 Takeo Kanade
- 2018 Masaki Kashiwara

### Order of Culture

- 2013 Tasuku Honjo
- 2021 Shigefumi Mori

### Person of Cultural Merit

- 1990 Shigefumi Mori
- 2000 Tasuku Honjo
- 2018 Kazutoshi Mori
- 2019 Takeo Kanade

### Order of the Sacred Treasure, Gold and Silver Star

- 2020 Masaki Kashiwara

### Medal with Purple Ribbon

- 2010 Kazutoshi Mori
- 2011 Susumu Kitagawa

### Member of the Japan Academy

- 1998 Shigefumi Mori
- 2005 Tasuku Honjo
- 2007 Masaki Kashiwara
- 2019 Susumu Kitagawa
- 2020 Takeo Kanade

## Message from the President



President, Kyoto University  
**Nagahiro Minato**

Since its establishment in 1897, under its guiding principle of academic freedom, the university has sought to contribute to harmonious coexistence in the global community through the cultivation of unique new knowledge. In 2017, Kyoto University was assigned by the Japanese government as one of Japan's first Designated National Universities (DNU). In accordance with its fundamental mission, the university seeks to contribute to humanity and society, and meet the constantly changing demands and needs of our times.

The Kyoto University Institute for Advanced Study (KUIAS) was established in April 2016 as a hub for the world's most advanced research. It comprises world-class research groups that include a Nobel laureate and a Fields Medalist, and two research centers established under the Japanese government's World Premier International Research Center Initiative (WPI). It is a platform that gathers the skills and creativity of numerous talented researchers from within Japan and overseas. Recently, in collaboration with international partner institutions, the institute has been establishing "On-site Laboratories" at various locations around the world to further enhance its global research and education activities.

KUIAS aims gather the collected knowledge and wisdom of leading domestic and international scholars, cultivate the next generation of talented researchers, and, as an organization that drives university reform, promote innovative initiatives in both research and education, as well as university management and administration.



Kyoto University Institute for Advanced Study

## Message from the Director-General



Director-General, KUIAS  
**Shigefumi Mori**

KUIAS is an institute that continuously conducts advanced research utilizing the strengths of Kyoto University. It features a team of excellent faculty members, including Distinguished Professors with internationally outstanding achievements in their respective fields, as well as various organizations engaged in world-leading research.

At present, KUIAS operates two World Premier International Research Center Initiative (WPI) centers : the Institute for Integrated Cell-Material Sciences (iCeMS) since 2017 and the newly established Institute for the Advanced Study of Human Biology (ASHBi) since 2018. In addition, two collaborative research centers established in partnership with RIKEN and with Toyota Physical and Chemical Research Institute are undertaking cutting-edge research in their particular disciplines and combining their respective strengths to help accelerate the activities of KUIAS.

With these researchers and research centers at its core, KUIAS will contribute to academic progress as a global, cutting-edge research hub that draws together the knowledge of domestic and overseas researchers, fosters future scientific leaders, and shares the fruits of Kyoto University's research with society.

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# About KUIAS

## ■ Timeline

2016 Apr. 1	Kyoto University Institute for Advanced Study (KUIAS) is established Center for Advanced Study is established within KUIAS
2017 Apr. 1	Institute for Integrated Cell-Material Sciences (iCeMS) becomes a research center of KUIAS AIST-Kyoto University Chemical Energy Materials Open Innovation Laboratory (ChEM-OIL) joins KUIAS as a collaborative research center
2018 Jan. 1	Center for Integrative Medicine and Physics (iCeMS-CiMPhy) joins KUIAS as an endowed research section
2018 Mar. 1	RIKEN-Kyoto University Science, Technology and Innovation Hub (RIKEN-Kyoto U Hub) joins KUIAS as a collaborative research center
2018 Oct. 30	Institute for the Advanced Study of Human Biology (ASHBi) joins KUIAS as a research center
2022 Apr. 1	Toyota Riken-Kyoto University Research Center (TRiKUC) joins KUIAS as a collaborative research center

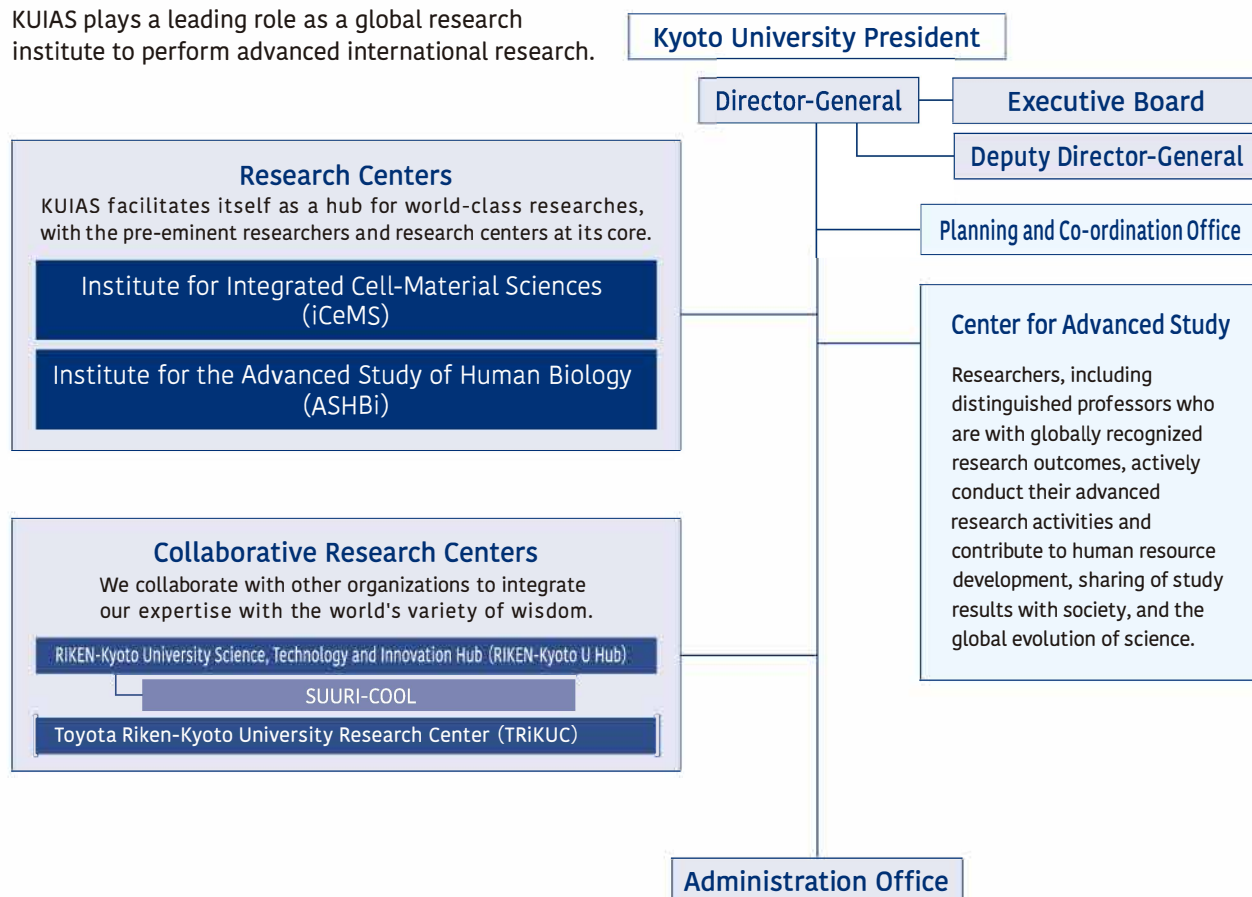
## ■ Features

KUIAS has the following features as an institute to grow into a leading center based on a new paradigm:

- Management with superb mobility under the strong leadership of the President
- Application of a pioneering organization system designed for a "special zone" within the university  
System to allow world-leading excellent researchers to continue their research regardless of the conventional mandatory retirement age

## ■ Organizational Structure

KUIAS plays a leading role as a global research institute to perform advanced international research.



# Executive Vice President Distinguished Professor



## Susumu Kitagawa

**Inorganic and Material Chemistry  
Chemistry of Coordination Space**

### ■ Biography

1974	B.Sc., Kyoto University
1976	M.Sc., Kyoto University
1979	Ph.D., Kyoto University
1979-1983	Assistant, Department of Chemistry, Kindai University
1983-1988	Lecturer, Department of Chemistry, Kindai University
1988-1992	Associate Professor of Department of Chemistry, Kindai University
1992-1998	Professor of Department of Chemistry, Tokyo Metropolitan University
1998-2017	Professor of Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University
2007-2012	Deputy Director and Professor of Institute for Integrated Cell-Material Sciences, Kyoto University
2013-2017	Director and Professor of Institute for Integrated Cell-Material Sciences, Kyoto University
2016-2018	Deputy Director-General of KUIAS
2017-2023	Director of Institute for Integrated Cell-Material Sciences, KUIAS
2020-2024	Deputy Director-General of KUIAS
2017-	Distinguished Professor of KUIAS
2024-	Kyoto University's Executive Vice President for Research Promotion

### | Research Overview |

Kitagawa's main research field is inorganic and material chemistry, in particular, chemistry of coordination space, and his current research interests are centered on synthesis and properties of porous coordination polymers/metal-organic frameworks.

He was the first to discover and to demonstrate "porosity" for metal complexes with gas sorption experiments (1997), whose materials are called porous coordination polymers (PCPs) or metal-organic frameworks (MOFs). To date, MOFs are classified as a new category of porous materials, as opposed to the conventional classifications of inorganic and carbon materials. Kitagawa pioneered the functional chemistry of MOFs, and discovered flexible MOFs, dissimilar to those of conventional porous materials. Today several hundred different MOFs are known, and over 7,000 articles on this class of materials have been published annually worldwide. The research developments built on his discoveries are anticipated to lead to radical innovations in materials science, with wide-ranging implications for both academia and industry. Chemical industry firms are producing MOF materials for use in purification, storage, and transportation of gases, among other applications. Kitagawa's achievement has blazed a trail to a new era for porous materials, vital to addressing energy and environmental issues and contributing to human welfare.

### ■ Honors

The Chemical Society of Japan Award (2009), Thomson Reuters Citation Laureate (Chemistry) (2010), Medal with Purple Ribbon (2011), Kyoto University Shi-Shi Award (2013), The fellow of the UK Royal Society of Chemistry (2013), Leo Esaki Prize (2013), Japan Academy Prize (2016), Fred Basolo Medal (2016), Fujihara Award (2017), Chemistry for the Future Solvay Prize (2017), Honorary Member of the Chemical Society of Japan (2017), Grand Prix de la Fondation de la Maison de la Chimie (2018), Emanuel Merck Lectureship Award (2019), Member of the Japan Academy (2019), Honorary Member of Japan Society of Coordination Chemistry (2021), Foreign Member of the Royal Society (2023)

### ■ Selected Papers

- [1] R. Matsuda, R. Kitaura, S. Kitagawa, Y. Kubota, R. V. Belosludov, T. C. Kobayashi, H. Sakamoto, T. Chiba, M. Takata, Y. Kawazoe, Y. Mita, Highly controlled acetylene accommodation in a metal-organic microporous material. *Nature* **436**, 238-241 (2005).
- [2] S. Horike, S. Shimomura, S. Kitagawa "Soft Porous Crystals" *Nat. Chem.* **1**, 695-704 (2009).
- [3] H. Sato, W. Kosaka, R. Matsuda, A. Hori, Y. Hijikata, R. V. Belosludov, S. Sakaki, M. Takata, S. Kitagawa, Self-Accelerating CO Sorption in a Soft Nanoporous Crystal. *Science* **343**, 167-170 (2014).
- [4] N. Hosono, A. Terashima, S. Kusaka, R. Matsuda, S. Kitagawa, Highly responsive nature of porous coordination polymer surfaces imaged by in situ atomic force microscopy. *Nature Chemistry* **11**, 109-116 (2018).
- [5] Y. Su, K. Otake, J.J. Zheng, S. Horike, S. Kitagawa, C. Gu Separating water isotopologues using diffusion-regulatory porous materials *Nature* **611**, 289-294 (2022).

# Director-General Distinguished Professor



## Shigefumi Mori

**Algebraic Geometry  
Birational Geometry**

### ■ Biography

1973	B.Sc., Kyoto University
1975	M.Sc., Kyoto University
1978	Ph.D., Kyoto University
1975-1980	Assistant of Faculty of Science, Kyoto University
1980-1982	Lecturer of Faculty of Science, Nagoya University
1982-1987	Associate Professor of Faculty of Science, Nagoya University
1988-1990	Professor of Faculty of Science, Nagoya University
1990-2016	Professor of Research Institute for Mathematical Sciences, Kyoto University
2011-2014	Director of Research Institute for Mathematical Sciences, Kyoto University
2016-	Director-General and Distinguished Professor of KUIAS

### | Research Overview |

Mori studies three-dimensional (3D) classification problems in a subfield known as birational classification theory of algebraic geometry. Algebraic geometry is a field in science that deals with shapes known as "algebraic varieties." Such an algebraic variety can appear in many slightly different forms if it is of dimension 2 (2D) or higher. The differences between these forms may be understood as partial dents or sharp points similar to those that appear in a physical object when it is struck by another. "Birational classification" refers to an approach where we ignore these minor differences when classifying algebraic varieties. It was known that one could make surfaces into minimal ones and minimize these differences by collapsing certain curves to points. This operation was known as the minimal model program (MMP).

For a long period of time, the generalization of the MMP to dimension three or higher was considered to be difficult; however, the introduction of extremal ray theory and application of general perspectives in [2] was a major trigger for the development of 3D MMP. Following this, MMP was developed, and it was discovered that in a broad sense, 3D birational classification theory is linked to the conjectural existence of an operation known as "flip." Furthermore, in [3], by proving the existence of 3D flips, the problem of 3D MMP was resolved. Hence, the 3D birational classification theory was completed in a rough sense. Subsequently, with the contribution of many researchers, MMPs of dimension four or higher have been established in a practical form.

### ■ Honors

Iyanaga Prize of Mathematical Society of Japan (1983), Autumn Prize of Mathematical Society of Japan (1988), Inoue Prize for Science (1989), Frank Nelson Cole Prize (1990), Japan Academy Prize (1990), Fields Medal (1990), Person of Cultural Merit (1990), Foreign Honorary Member of the American Academy of Arts and Sciences (1992), Member of the Japan Academy (1998), Honorary Doctorate of University of Turin (2002), Fujihara Award (2004), University Professor of Nagoya University (2010), President of the International Mathematical Union (2015-2018), Foreign Member of the Russian Academy of Sciences (2016), Foreign Associate of US National Academy of Sciences (2017), Honorary Doctorate of University of Warwick (2017), Kodaira Kunihiko Prize (2019), Kyoto Prefecture Culture Prize for Outstanding Contribution (2020), Order of Culture (2021), Foreign Member of the Academy of Sciences of Turin (2023)

### ■ Selected Papers

- [1] S. Mori, Projective manifolds with ample tangent bundles, *Ann. Math.* **110**, 593-606 (1979).
- [2] S. Mori, Threefolds whose canonical bundles are not numerically effective, *Ann. Math.* **116**, 133-176 (1982).
- [3] S. Mori, Flip theorem and the existence of minimal models for 3-folds, *J. Amer. Math. Soc.* **1**, 117-253 (1988).
- [4] J. Kollar, S. Mori, Classification of three dimensional flips, *J. Amer. Math. Soc.* **5**, 533-703 (1992); *Erratum* **20**, 269-271 (2007).
- [5] S. Mori, Y. Prokhorov, On Q-conic bundles, *Publ. Res. Inst. Math. Sci.* **44**, 315-369 (2008).

# Deputy Director-General Distinguished Professor



## Tasuku Honjo

### Molecular Immunology

#### ■ Biography

1966	M.D., Kyoto University
1975	Ph.D., Kyoto University
1971-1973	Fellow of Carnegie Institution of Washington, Department of Embryology
1973-1974	Visiting Fellow and Associate of National Institute of Child Health and Human Development, NIH
1974-1979	Assistant Professor of Faculty of Medicine, The University of Tokyo
1979-1984	Professor of School of Medicine, Osaka University
1984-2005	Professor of Faculty of Medicine, Kyoto University
1996-2000	Director of Faculty of Medicine/Graduate School of Medicine, Kyoto University
2002-2004	Director of Faculty of Medicine/Graduate School of Medicine, Kyoto University
2005-	Specially-Appointed Professor of Graduate School of Medicine, Kyoto University
2006-2017	Visiting Professor of Kyoto University
2006-2012	Executive Member of the Council for Science and Technology Policy, Cabinet Office
2012-2017	Chairman, Board of Directors, Shizuoka Prefectural University Corporation
2015-2024	President of Foundation for Biomedical Research and Innovation (2018- Foundation for Biomedical Research and Innovation at Kobe)
2017-	Distinguished Professor of KUIAS
2018-	Deputy Director-General of KUIAS
2020-	Director of Center for Cancer Immunotherapy and Immunobiology (CCII), Graduate School of Medicine, Kyoto University
2024-	Honorary President of Foundation for Biomedical Research and Innovation at Kobe

#### | Research Overview |

Honjo is well known for his discovery of activation-induced cytidine deaminase (AID) that is essential for class switch recombination and somatic hypermutation. He has established the basic conceptual framework of class switch recombination starting from discovery of DNA deletion (1978). Dr. Honjo identified a series of key molecules involved in immune regulation, including IL-4, IL-5, SDF-1, and IL-2R  $\alpha$  chain. Also appreciated is his seminal contribution to developmental biology by identification of RBP-J as the Notch signaling target. In addition, he discovered PD-1 (program cell death 1), a negative coreceptor at the effector phase of immune response and demonstrated that PD-1 inhibition contributes to cancer treatments. Anti-PD-1 cancer immunotherapy has been approved in US, EU, and Japan. This treatment revolutionized the cancer therapy and is considered to be equivalent to penicillin in infectious diseases.

#### ■ Honors

Noguchi Hideyo-Memorial Award for Medicine (1981), Asahi Prize (1982), The Imperial Prize and the Japan Academy Prize (1996), Person of Cultural Merit (2000), Foreign Associate of U.S. National Academy of Sciences (2001), Thomson Leading Japanese Scientists in Emerging Research Fronts (2004), Member of the Japan Academy (2005), Robert Koch Prize (2012), Order of Culture (2013), Tang Prize, Biopharmaceutical Science Award (2014), William B. Coley Award (2014), JCA-CHAAO Award (2014), Richard V. Smalley, MD Memorial Award (2015), Kyoto Prize (2016), The Keio Medical Science Prize (2016), Fudan-Zhongzhi Science Award in Biomedicine (2016), The Pharmaceutical Society of Japan Award (2016), Warren Alpert Foundation Prize (2017), Nobel Prize in Physiology or Medicine (2018)

#### ■ Selected Papers

- [1] T. Honjo, T. Kataoka, Organization of immunoglobulin heavy chain genes and allelic deletion model. *Proc. Natl. Acad. Sci. USA* **75**, 2140-2144 (1978).
- [2] Y. Yaoita, T. Honjo, Deletion of immunoglobulin heavy chain genes from expressed allelic chromosome. *Nature* **286**, 850-853 (1980).
- [3] Y. Ishida, Y. Agata, K. Shibahara, T. Honjo, Induced expression of PD-1, a novel member of the immunoglobulin gene superfamily, upon programmed cell death. *EMBO J.* **11**, 3887-3895 (1992).
- [4] M. Muramatsu, K. Kinoshita, S. Fagarasan, S. Yamada, Y. Shinkai, T. Honjo, Class switch recombination and hypermutation require activation-induced cytidine deaminase (AID), a potential RNA editing enzyme. *Cell* **102**, 553-563 (2000).
- [5] Y. Iwai, M. Ishida, Y. Tanaka, T. Okazaki, T. Honjo, N. Minato, Involvement of PD-L1 on tumor cells in the escape from host immune system and tumor immunotherapy by PD-L1 blockade. *Proc. Natl. Acad. Sci. USA* **99**, 12293-12297 (2002).
- [6] M. Al-Habsi, K. Chamoto, K. Matsumoto, N. Nomura, B. Zhang, Y. Sugiura, K. Sonomura, A. Maharani, Y. Nakajima, Y. Wu, Y. Nomura, R. Menzies, M. Tajima, K. Kitaoka, Y. Haku, S. Delghandi, K. Yurimoto, F. Matsuda, S. Iwata, T. Ogura, S. Fagarasan, T. Honjo, Spermidine activation of the mitochondrial trifunctional protein complex improves anti-tumor immunity in mice *Science* **378** (6618) (2022)

# Deputy Director-General Distinguished Professor



## Kazutoshi Mori

**Molecular Biology  
Cell Biology**

### ■ Biography

1981	B.Sc., Kyoto University
1983	M.Sc., Kyoto University
1987	Ph.D., Kyoto University
1985-1989	Assistant Professor, Gifu Pharmaceutical University
1989-1993	Postdoctoral Fellow, University of Texas Southwestern Medical Center at Dallas
1993-1996	Deputy Research Manager, HSP Research Institute
1996-1999	Research Manager, HSP Research Institute
1999-2003	Associate Professor, Graduate School of Biostudies, Kyoto University
2003-2022	Professor, Graduate School of Science, Kyoto University
2022-2024	Professor, Institute for Liberal Arts and Sciences, Kyoto University (Concurrent Professor of Graduate School of Science)
2024-	Distinguished Professor of KUIAS Deputy Director-General of KUIAS

### | Research Overview |

Receptor-type transmembrane proteins at the plasma membrane and their ligand-type secretory proteins play critical roles in intercellular communication. These proteins gain their own three-dimensional structure to exert their function with assistance from molecular chaperones and folding enzyme present in the endoplasmic reticulum (ER), the first organelle they encounter after synthesis on ribosomes. Under a variety of physiological and pathological conditions, however, this protein quality control system is compromised, resulting in the occurrence of ER stress characterized by the accumulation of unfolded proteins in the ER. Essentially all eukaryotic cells are equipped with a way to cope with this abnormal situation promptly and adequately, which is termed the unfolded protein response (UPR). This fact tells us the critical importance of protein folding in our cell and body. Dr. Mori has unraveled the mechanism of yeast and mammalian UPR and is analyzing physiological significance of the UPR and its involvement in development and progression of various diseases.

### ■ Honors

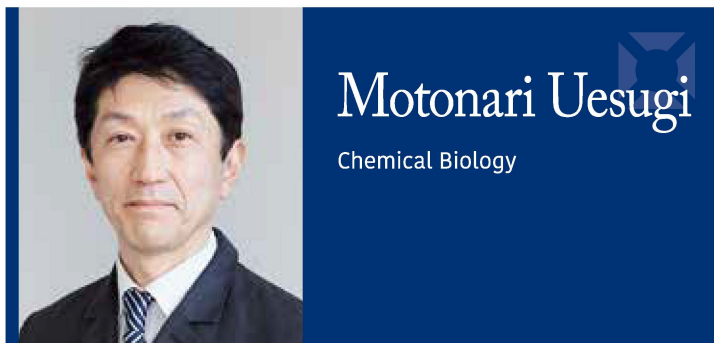
The Wiley Prize in Biomedical Sciences (2005), Osaka Science Prize (2008), Canada Gairdner International Award (2009), Medal with Purple Ribbon (2010), Uehara Prize (2012), Asahi Prize (2014), Albert Lasker Basic Medical Research Award (2014), Shaw Prize in Life Science and Medicine (2014), Thomson Reuters Citation Laureate (2015), Kyoto University Shi-Shi Award (2015), Imperial Prize and Japan Academy Prize (2016), Breakthrough Prize in Life Sciences (2017), Person of Cultural Merit (2018), Momofuku Ando Grand Prize (2018), Keio Medical Science Prize (2023), BBVA Foundation Frontiers of Knowledge Award (2024)

### ■ Selected Papers

- [1] A transmembrane protein with a *cdc2+*/CDC28-related kinase activity is required for signaling from the ER to the nucleus. K. Mori, W. Ma, M.-J. Gething, and J. Sambrook, *Cell*, **74**, 743-756, 1993.
- [2] Mammalian transcription factor ATF6 is synthesized as a transmembrane protein and activated by proteolysis in response to endoplasmic reticulum stress. K. Haze, H. Yoshida, H. Yanagi, T. Yura, and K. Mori, *Mol. Biol. Cell*, **10**, 3787-3799, 1999.
- [3] XBP1 mRNA is induced by ATF6 and spliced by IRE1 in response to ER stress to produce a highly active transcription factor. H. Yoshida, T. Matsui, A. Yamamoto, T. Okada, and K. Mori, *Cell*, **107**, 881-891, 2001.
- [4] Transcriptional induction of mammalian ER quality control proteins is mediated by single or combined action of ATF6 $\alpha$  and XBP1. K. Yamamoto, T. Sato, T. Matsui, M. Sato, T. Okada, H. Yoshida, A. Harada and K. Mori, *Dev. Cell*, **13**, 365-376, 2007.
- [5] UPR Transducer BBF2H7 Allows Export of Type II Collagen in a Cargo- and Developmental Stage-Specific Manner. T. Ishikawa, T. Toyama, Y. Nakamura, K. Tamada, H. Shimizu, S. Ninagawa, T. Okada, Y. Kamei, T. Ishikawa-Fujiwara, T. Todo, E. Aoyama, M. Takigawa, A. Harada and K. Mori, *J. Cell Biol.*, **216**, 1761-1774, 2017.



## iCeMS Director / Professor



Uesugi has been making ground-breaking discoveries in the field of chemical biology. As biological processes all stem from chemical events, it should be possible to understand or manipulate biological events by using chemistry. Uesugi and his co-workers have been discovering or designing unique organic molecules that modulate or interrogate fundamental processes in human cells. Such synthetic organic molecules often serve as tools for basic cell biology and for dissecting diseases. In particular, he has a special interest in combining chemical biology and material science concepts to open new avenues in cell biology and medical applications.

### ■ Biography

- 1990 B.S., Kyoto University
- 1995 Ph.D., Kyoto University
- 1995-1998 Postdoctoral training, Department of Chemistry and Chemical Biology, Harvard University
- 1998-2005 Assistant Professor, Department of Biochemistry, Baylor College of Medicine
- 2005-2009 Associate Professor, Department of Biochemistry, Baylor College of Medicine
- 2005- Professor, Institute for Chemical Research, Kyoto University
- 2007-2017 Professor, Institute for Integrated Cell-Material Sciences, Kyoto University
- 2013-2017 Deputy Director, Institute for Integrated Cell-Material Sciences, Kyoto University
- 2017-2023 Deputy Director, Institute for Integrated Cell-Material Sciences, KUIAS
- 2023- Director, Institute for Integrated Cell-Material Sciences, KUIAS

### ■ Honors

Gold Medal Award - Tokyo Techno Forum 21 (2006), Pharmaceutical Society of Japan Award for Divisional Scientific Promotions (2011), German Innovation Award (2011), Ichimura Prize in Science (2017)

## ASHBi Director / Professor



Saitou has been promoting studies on the developmental mechanisms of germ cells, the origin of all life. He clarified the formation mechanisms of mouse germ cells and successfully generated primordial germ cell-like cells (PGCLCs) in vitro from mouse ESCs and iPSCs to produce sperm, oocytes and healthy offspring. He used this experimental system as a model to investigate the molecular mechanisms of key phenomena in germ cell development, including epigenomic reprogramming, oocyte differentiation, and meiosis induction mechanisms. Saitou's analysis of the developmental mechanisms of cynomolgus monkeys has allowed us to identify the characteristics of pluripotent cell lineages in mice, monkeys and humans and the formation mechanisms of germ cells in primates. He has also generated PGCLCs and oogonium from human iPSCs and pioneered research on in vitro reconstitution in the process of human germ cell development.

Saitou aims to promote advanced human biology that develops these studies, to identify the characteristics and evolutionary mechanisms of humans and primates, and to lay out new possibilities in medical science.

### ■ Biography

- 1995 M.D., Kyoto University
- 1999 Ph.D., Kyoto University
- 1999-2003 Travelling Research Fellow/Senior Research Associate, Wellcome Trust/Cancer Research UK Gurdon Institute for Developmental Biology and Cancer
- 2003-2009 Team leader, RIKEN Center for Developmental Biology
- 2009-2018 Professor, Graduate School of Medicine and Faculty of Medicine, Kyoto University
- 2011-2018 Director, JST Strategic Basic Research Programs ERATO
- 2013-2018 Adjunct Principal Investigator, Institute for Integrated Cell-Material Sciences, Kyoto University
- 2018- Guest Principal Investigator, Center for iPSC Cell Research and Application, Kyoto University
- 2018- Professor of KUIAS  
Director of Institute for the Advanced Study of Human Biology, KUIAS

### ■ Honors

Osaka Science Prize (2013), Japan Academy Medal and JSPS Prize (2014), Takeda Medical Prize (2016), Academic Award of the Mochida Memorial Foundation (2018), Asahi Prize, Uehara Prize (2019), Imperial Prize and Japan Academy Prize, ISSCR Momentum Award, EMBO Associate Member (2020)



## Takeo Kanade

**Invited Distinguished Professor**

Computer Vision, Robotics,  
Artificial Intelligence, Multimedia

Since early 70's, Kanade has performed a series of pioneering research in computer vision. The feature of his accomplishments is that they are fundamental in nature and have practical impacts. To illustrate a few, his neural network-based face detection technique raised the detection rate to an unprecedented level and thus led to today's common use of face detection in smart phone cameras; his optical-flow algorithm for estimating the direction and speed of moving patterns is now the basis of almost all the video processing including motion video coding; and his factorization algorithm for the so-called structure-from-motion problem was one of the earliest algorithms that demonstrated a successful reconstruction of three-dimensional shape from image sequence, which now is a powerful and common procedure for scene modeling by video. Kanade launched an autonomous vehicle project in 1985, and formed the early foundation for the recent emergence of autonomous driving technologies. The team developed one of the first artificial intelligence systems capable of sensing freeway lanes, executing accurate lane changes, recognizing and avoiding obstacles, and detecting other vehicles in real time based on data from vehicle-mounted range sensors and cameras. In 1995, he carried out a demonstration called No Hands Across America, in which the NAVLAB 5 vehicle drove from coast to coast, 98.2% under auto driving.

### ■ Biography

1974	Ph.D., Kyoto University
1974-1976	Research Assistant, Faculty of Engineering, Kyoto University
1976-1980	Associate Professor, Faculty of Engineering, Kyoto University
1980-1982	Senior Research Scientist, The Robotics Institute and Computer Science Department, Carnegie Mellon University (CMU)
1982-1985	Associate Professor, The Robotics Institute and Computer Science Department, CMU
1985-1994	Professor, The Robotics Institute and Computer Science Department, CMU
1992-2001	Director, The Robotics Institute, CMU
1993-1998	U.A. and Helen Whitaker Chaired Professor, CMU
1998-2023	U.A. and Helen Whitaker University Professor, CMU
2004-2010	Director, Digital Human Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2006-2012	Director, Quality of Life Technology Engineering Research Center, CMU
2015-	Honorary AIST Fellow
2016-2021	Senior advisor, Center for Advanced Integrated Intelligence Research, RIKEN
2017-	Invited Distinguished Professor, Kyoto University Institute for Advanced Study (KUIAS)
2024-	Founders University Professor of Computer Science and Robotics, CMU

### ■ Honors

Joseph F. Engelberger Award (1995), Foreign Member of US National Academy of Engineering (1997), C&C Prize (2000), Member of the American Academy of Arts and Sciences (2004), Azriel Rosenfeld Lifetime Achievement Award, IEEE Computer Society (2007), Robot & Automation Pioneer Award, IEEE (2007), Okawa Prize (2007), Bower Award and Prize for Achievement in Science, The Franklin Institute (2008), ACM-AAAI Allen Newell Award (2010), Tateishi Prize, Grand Award (2010), Kyoto Prize (2016), IEEE Founders Medal (2017), Person of Cultural Merit (2019), Global IT Award, State Award of Armenia (2019), Member of the Japan Academy (2020), Kyoto Prefecture Culture Prize for Outstanding Contribution (2022), BBVA Foundation Frontiers of Knowledge Award (2024)



## Masaki Kashiwara

**Program-Specific Professor**

Mathematics, Algebraic Analysis,  
Representation Theory

Dr. Kashiwara's work in Mathematics extends from microlocal analysis, representation theory and combinatorics to homological algebra, symplectic geometry and integrable systems. Most well-known works of him are his contributions to the theory of D-modules and his creation of crystal basis theory. Introduced by Sato around 1960, algebraic analysis is a framework in which systems of linear differential equations are formulated as modules over the ring  $D$  of differential operators and are investigated with algebraic means such as rings, modules, sheaves and categories. Sato's idea of D-modules was greatly developed by Kashiwara, and has become a fundamental tool in many branches of mathematics. In the 1980s with Schapira he further introduced and developed microlocal sheaf theory. One of his early major results was his 1980 construction of the Riemann-Hilbert correspondence, a generalization of Hilbert's 21st problem about the existence of a linear differential equation on the projective line with prescribed monodromy. The Riemann-Hilbert correspondence, found a remarkable application to a problem in representation theory, called the Kazhdan-Lusztig conjecture.

### ■ Biography

1971	M.Sci., Graduate School of Science, The University of Tokyo
1971-1974	Assistant, Research Institute for Mathematical Sciences, Kyoto University
1974-1977	Associate Professor, Nagoya University
1974	Ph.D., Kyoto University
1977-1978	Associate researcher, Massachusetts Institute of Technology
1978-1984	Associate Professor, Research Institute for Mathematical Sciences, Kyoto University
1984-2010	Professor, Research Institute for Mathematical Sciences, Kyoto University
2001-2003	Director of Research Institute for Mathematical Sciences, Kyoto University
2007-2009	Director of Research Institute for Mathematical Sciences, Kyoto University
2010-	Project Professor, Research Institute for Mathematical Sciences, Kyoto University
2019-	Program-Specific Professor, Kyoto University Institute for Advanced Study (KUIAS)

### ■ Honors

Iyanaga Prize of Mathematical Society of Japan (1981), Asahi Prize (1988), Japan Academy Prize (1988), Member of the Japan Academy (2007), Fujihara Award (2008), Chern Medal (2018), Kyoto Prize (2018), The Order of the Sacred Treasure, Gold and Silver Star (2020), Frontiers of Science Award (2023), Kyoto Prefecture Culture Prize for Outstanding Contribution (2024)



## Yasuaki Hiraoka

Director of Center for Advanced Study /  
Deputy Director of ASHBI / Professor

Topological Data Analysis,  
Applied Mathematics

Hiraoka is a world leading mathematician in the area of topological data analysis (TDA). He studies mathematical theory and algorithms of TDA, and also works on applying them into scientific and engineering problems. His primary interest is to develop descriptors for characterizing shape of complex and big data. By combining various mathematical theories such as topology, representation, probability, he succeeded in making TDA powerful and general for practical problems. In applications, he has organized the materials TDA team, and his group achieved several pioneering results on structural analysis in materials science based on TDA. In particular, a series of methods developed by his group using persistent homology, machine learning, and inverse analysis are expected to be a key technology for materials informatics in future. In addition to materials science, he has recently launched TDA projects for other application areas such as life science.

### ■ Biography

- 2005 Doctor of Science, Graduate School of Engineering Science, Osaka University
- 2005-2006 JSPS PD, Research Institute for Electronic Science, Hokkaido University
- 2006-2009 Assistant Professor, Graduate School of Science, Hiroshima University
- 2009-2011 Associate Professor, Graduate School of Science, Hiroshima University
- 2009-2010 Visiting researcher, Department of Mathematics, University of Pennsylvania
- 2011-2015 Associate Professor, Institute of Mathematics for Industry (IMI), Kyushu University
- 2015-2016 Associate Professor, Advanced Institute for Materials Research (AIMR), Tohoku University
- 2016-2018 Professor, Advanced Institute for Materials Research (AIMR), Tohoku University
- 2017-2018- Team Leader, Center for Advanced Intelligence Project, RIKEN  
Director of Center for Advanced Study and Professor, Kyoto University Institute for Advanced Study (KUIAS)
- 2018- Deputy Director of Institute for the Advanced Study of Human Biology, Kyoto University Institute for Advanced Study (KUIAS)

### ■ Honors

JSIAM Best Paper Award (2004), The 1st Hiroshi Fujiwara Mathematical Science Award (2012), NISTEP Award (2016), JCS-Japan Award of the Outstanding Papers (2019), MIMS Mimura Award (2023)



## Yasuhiro Murakawa

Professor

Human Genomics, Medicine, Life Science

More than 15 years have passed since the DNA sequence of the human genome, the general blueprint of the human being, was determined by an international research effort. However, "what is written in our human genome" is still largely unknown. Dr. Murakawa's team aims to understand the operating principles of our human genome that give rise to the dynamics of life, by combining classical biochemistry, cutting-edge high-throughput sequencing technology, and bioinformatics approach. We integrate multi-scale human data from the molecular level to the social level, and understand the fundamental mechanisms of our life, aging and death. We are also engaged in research with the aim of elucidating how diseases are caused and creating new future therapies. To this end, we hope to stay eccentric.

### ■ Biography

- 2008 M.D., Kyoto University
- 2008-2010 Resident, Kyoto University Hospital
- 2010-2015 DAAD fellow, Max-Delbrueck-Center for Molecular Medicine
- 2014 Ph.D., Free University of Berlin
- 2015-2018 Manager, RIKEN Preventive Medicine & Diagnosis (PMI)
- 2016-2018 Unit Leader, RIKEN Innovation Center (RInC)
- 2018- Team Leader, RIKEN Center for Integrative Medical Sciences (IMS)
- 2018- Group Leader, The FIRC Institute Molecular Oncology (IFOM)
- 2020- Professor, Kyoto University Institute for Advanced Study (KUIAS)

### ■ Honors

Kyoto University President's Award (2008)



## Shinya Yamamoto

Associate Professor

Animal Behavior,  
Comparative Cognitive Science

Dr. Yamamoto has explored the evolutionary mystery of "humanity" by studying a diverse range of animals, including our evolutionary neighbors, chimpanzees and bonobos. Through fieldwork and cognitive experiments, he has delved into the dual nature of humans, who are capable of both cooperation and conflict, questioning how this dichotomy evolved. He has investigated the origins of this duality and its potential future changes. Dr. Yamamoto's research extends beyond the past by envisioning the future of human society. The key themes of his research include social intelligence, empathy, understanding of others, cooperation, culture, and group-mindedness. His previous work revealed that chimpanzees help others upon request, but not proactively, even when they understand others' goals. This suggests that proactive helping is a distinctive human trait, distinguishing them from other animals. By understanding the behavior and minds of animals, Dr. Yamamoto seeks to unveil the essence of human nature.

### ■ Biography

- 2009 Ph.D. Science (Comparative Psychology), Graduate School of Science, Kyoto University
- 2009-2010 JSPS Post Doctoral Fellow (PD), Graduate School of Arts and Sciences, University of Tokyo
- 2010-2013 Program-specific Assistant Professor, Primate Research Institute, Kyoto University
- 2013-2017 Associate Professor, Graduate School of Intercultural Studies, Kobe University
- 2013-2017 Specially Appointed Associate Professor, Wildlife Research Center, Kyoto University
- 2017- Associate Professor, Kyoto University Institute for Advanced Study (KUIAS)
- 2017- Concurrent Associate Professor, Wildlife Research Center, Kyoto University

### ■ Honors

Takashima Award, Primate Society of Japan (2011), Award for Distinguished Early and Middle Career Contribution, Japanese Psychological Association's International Award (2015), Young Researcher Award, Kobe University President Award (2016), MEXT Young Scientists' Prize (2019)



## Institute for Integrated Cell-Material Sciences (iCeMS)

iCeMS is committed to integrating materials science and cell biology to establish novel academic disciplines. Our mission is to explore the secrets of life by creating compounds to control cells, and further down the road to create life-inspired super materials.

Our approach is radical and new. At iCeMS we are not simply rewriting the rule-book, we are throwing it out the window. Traditional single discipline-based research is not enough for nurturing flexible and innovative ideas. Thus at iCeMS, biologists, chemists, engineers, physicists, and mathematicians share ideas and work together to devise new ways to integrate cells and materials, to keep creating new science.

iCeMS was established in 2007 as a center of the World Premier International Research Center Initiative (WPI Program) supported by Japan's Ministry of Science and has since fostered research excellence and promoted internationalization. In 2017, the institute was certified as a WPI Academy center for its level of research and management was recognized as having achieved "world premier status."



Motonari Uesugi  
Director



### ■ Timeline

- 2007 Sep. iCeMS is selected for the World Premier International Research Center Initiative (WPI Program) by the Ministry of Education, Culture, Sports, Science and Technology (MEXT).
- Oct. iCeMS is established at Kyoto University with Prof. Norio Nakatsuji as founding director.
- 2008 Jan. The Center for iPS Cell Research and Application (CiRA) is established under the auspices of iCeMS with Prof. Shinya Yamanaka as founding director.
- 2010 Apr. The Center for iPS Cell Research and Application (CiRA) is re-established as a sister institute to iCeMS with Prof. Shinya Yamanaka as founding director.
- 2012 Oct. Prof. Shinya Yamanaka wins the Nobel Prize in Physiology or Medicine.
- 2013 Jan. Prof. Susumu Kitagawa succeeds Prof. Nakatsuji as director.
- 2017 Apr. iCeMS becomes a research center of KUIAS.
- May. iCeMS is certified as a WPI Academy center by MEXT.
- 2023 Apr. Prof. Motonari Uesugi succeeds Prof. Kitagawa as director.



## ■ Principal Investigators (PIs) and Fellows

At iCeMS, researchers from different fields work together to devise groundbreaking ideas.

### | Principal Investigators (PIs)



**Daishi Fujita**  
Supramolecular Chemistry,  
Chemical Biology



**Aiko Fukazawa**  
Deputy Director  
Physical Organic Chemistry,  
Organic Synthesis



**Shuhei Furukawa**  
Chemistry of Molecular  
Assemblies



**Mineko Kengaku**  
Deputy Director /  
iCeMS Analysis Center Director  
Developmental Biology of  
Nervous System



**Susumu Kitagawa**  
Distinguished Professor  
Inorganic Chemistry,  
Chemistry of Coordination  
Space



**Kazuki Nakanishi**  
Sol-Gel Science,  
Porous Materials



**Ganesh Pandian  
Namasivayam**  
PI Board Chair  
Bio-inspired Therapeutics,  
Epigenetics



**Daniel Packwood**  
Applied Mathematics and  
Theoretical Chemistry



**Easan Sivaniah**  
Clean Technology



**Jun Suzuki**  
Deputy Director  
Medical Biochemistry,  
Cell Membrane Biology



**Fuyuhiko Tamanoi**  
Nanoparticles and  
Cancer Therapy



**Yuichi Taniguchi**  
Biophysics, Systems  
Biology



**Kazumitsu Ueda**  
Research Administrative Director  
Agricultural Chemistry



**Motonari Uesugi**  
Director  
Chemical Biology

### | The Hakubi Project



**Tomoko Inose**  
Photochemistry,  
Surface Chemistry



**Kohei Kusada**  
Nanomaterials,  
Inorganic Chemistry



**Sooyeon Kim**  
Photochemistry and  
Bioanalysis



**Sayuri Motani**  
Molecular Biology,  
Germ Cell biology

### | Adjunct Principal Investigators

Ryu Abe

Itaru Hamachi

Satoshi Horike

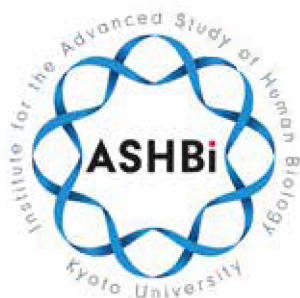
Hiroshi Imahori

Hiroshi Kageyama

Hiroshi Kitagawa

Yasuo Mori

Koichiro Tanaka



## Institute for the Advanced Study of Human Biology (ASHBi)

ASHBi aims to establish an advanced study of human biology that sheds light on the origin and unique characteristics of human beings, by elucidating the design principles of human beings and disease states and by synthesizing this knowledge, using an interdisciplinary methodology that integrates multiple fields of study (life sciences, mathematics, humanities).

ASHBi was established in 2018 within the Kyoto University Institute for Advanced Study (KUIAS) as a new research center for the World Premier International Research Center Initiative (WPI) program of the Ministry of Education, Culture, Sports, Science and Technology (MEXT). ASHBi creates a highly open and flexible international research environment, and along with iCeMS, will be a world-leading international research center.



Mitinori Saitou  
Director

### ■ Key Features of the Institute

- Research collaboration between biology and mathematics, and between biology and the humanities
- Core facilities with leading-edge technologies: Single-Cell Genome Information Analysis Core (SignAC), Primate Genome Engineering Core (PRIME) and Non-human Primate Phenotype Analysis Facility (NPAF)
- Prioritized support for overseas PIs and links with key international institutions (including EMBL, University of Cambridge, Karolinska Institutet)
- Strong links with the Kyoto University Hospital
- Prioritized support for early-career PIs linking with the University's researcher fostering projects.



### ■ Timeline

- 2018 Oct. ASHBi is selected by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) as a part of the World Premier International Research Center Initiative (WPI).  
ASHBi is established within KUIAS.  
ASHBi Satellite is established at the Shiga University of Medical Science.
- 2019 Mar. ASHBi Kick-off Symposium is held.
- 2023 Feb. ASHBi received "A" as the Interim Evaluation Score for the WPI Program.



## ■ Key Members

At ASHBI, researchers in life sciences, mathematics and humanities pursue to create new ideas beyond their respective fields.



**Cantas Alev**  
[PI]  
Professor, KUIAS  
Developmental Biology



**Ken-ichi Amemori**  
[PI]  
Associate Professor, KUIAS  
Neuroscience, Cognitive  
Neurophysiology



**Guillaume Bourque**  
[PI]  
Professor, McGill University  
Bioinformatics, Genomics,  
Epigenomics



**Masatsugu Ema**  
[PI]  
Professor, Shiga University of  
Medical Science  
Developmental Biology,  
Developmental Engineering



**Misao Fujita**  
[PI]  
Professor, Center for IPS Cell  
Research and Application (CiRA)  
Bioethics



**Takashi Hiiragi**  
[PI]  
Professor, Graduate School of Medicine  
Group Leader, Hubrecht Institute  
Developmental Biology



**Yasuaki Hiraoka** ●  
[Vice Director, PI]  
Professor, KUIAS  
Applied Mathematics



**Fumitaka Inoue**  
[Co-PI (Bourque G)]  
Associate Professor, KUIAS  
Genomics, Molecular  
Developmental Biology



**Tadashi Isa**  
[Core Head (NPAF), PI]  
Professor, Graduate School of  
Medicine  
Neuroscience



**Yasuhiro Murakawa**  
[PI]  
Professor, KUIAS  
Human Genomics, Medical Science,  
Systems Biology



**Seishi Ogawa**  
[PI]  
Professor, Graduate School of  
Medicine  
Molecular Oncology



**Tadashi Ogawa** ●  
[Administrative Director]  
Professor, KUIAS  
Cognitive Neuroscience,  
Experimental Psychology



**Mitinori Saitou** ●  
[Director, PI]  
Professor, KUIAS  
Developmental Biology



**Sungrim Seirin-Lee**  
[PI]  
Professor, KUIAS  
Mathematical Biology and Medicine,  
Mathematical modeling, Applied  
Mathematics



**Taro Tsujimura**  
[Core Manager (SignAC)]  
Junior Associate Professor, KUIAS  
Genomics and Gene Regulation



**Tomoyuki Tsukiyama**  
[Core Head (PRiME)]  
Associate Professor, Shiga  
University of Medical Science  
Developmental Engineering,  
Reproductive and Stem Cell Biology



**Hideki Ueno** ●  
[Vice Director, PI]  
Professor, Graduate School of  
Medicine  
Human Immunology



**Ryo Yamamoto**  
[PI]  
Associate Professor, KUIAS  
Stem Cell Biology, Hematology



**Takuya Yamamoto** ●  
[Core Head (SignAC), PI]  
Associate Professor, Center for IPS  
Cell Research and Application  
(CiRA)  
Molecular Biology, Bioinformatics



**Motoko Yanagita**  
[PI]  
Professor, Graduate School of  
Medicine  
Nephrology

● ASHBI Executive Board members

# Collaborative Research Centers

## ■ RIKEN-Kyoto University Science, Technology and Innovation Hub (RIKEN-Kyoto U Hub)

Through collaboration between Kyoto University and RIKEN, this Hub aims to conduct joint research by using their respective potencies, extending the borders of their research organizational frameworks and study areas. It further strives to promote the world's most advanced research, leading to the development of new research horizons, and motivate next-generation researchers to advance its endeavors.

### SUURI-COOL

The first collaborative center of the Hub, has recently been established within KUIAS. Its ultimate goal is to unravel the mysteries of the universe, matter and life, as well as address various key issues of modern society through its unique interdisciplinary approaches focusing on mathematics. We conduct researcher exchanges, joint research, and training of young researchers in various forms with the Graduate School of Science (human resource development in the mathematical sciences), the Graduate School of Advanced Integrated Studies in Human Survivability (social sciences), the Research Institute for Mathematical Sciences (mathematics) and Yukawa Institute for Theoretical Physics, Kyoto University (theoretical physics).



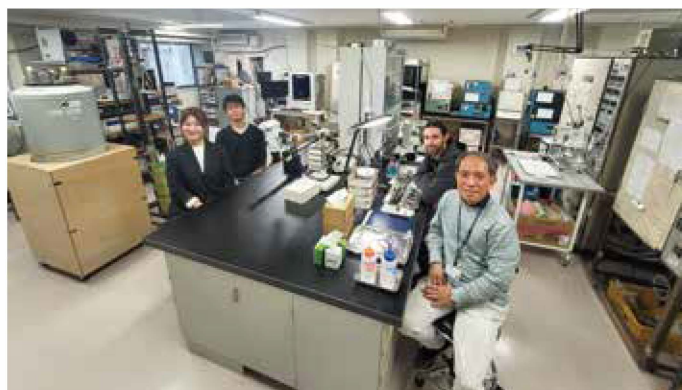
Group photo of students visiting RIKEN Wako campus and RIKEN iTHEMS researchers



Visit to RI Beam Factory in RIKEN

## ■ Toyota Riken-Kyoto University Research Center (TRiKUC)

TRiKUC was established on the Kyoto University main campus in April 2022 as a research center of collaboration between Kyoto University and Toyota Physical and Chemical Research Institute. TRiKUC conducts research on quantum materials, especially on superconductors, for the purpose of contributing to the progress of basic science, fostering the next generation of researchers, and disseminating research outcomes among the public. Our research aims are (1) elucidation of unconventional superconducting states in the ruthenium oxide superconductor, (2) development of superconductors related to topological materials, and (3) exploration of novel properties emerging in quantum materials under uniaxial pressure. We tackle these topics through synthesis of new materials, growth of ultra-pure single crystals, and measurements of their physical properties to temperatures down to 0.3 kelvin.



TRiKUC laboratory facility and members. We have equipment for crystal growth, sample characterization, and low-temperature measurements down to 0.3 kelvin.

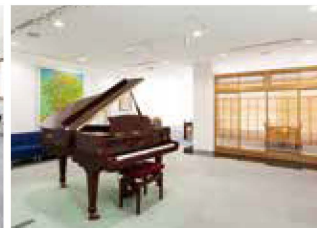


# Facilities

## ■ KUIAS Main Building

[Approx. 4,000m<sup>2</sup>]

The Main Building bears the headquarter functions of KUIAS. In addition to laboratories and collaborative research spaces, the building has a seminar hall, a lounge for informal gatherings of researchers, and an exhibition room which can also be used for meetings.



## ■ KUIAS West Building

[Approx. 550m<sup>2</sup>]

The West Building mainly serves as the laboratory and office of faculty members and researchers of the Center for Advanced Study. To facilitate exchanges among researchers, the building is also equipped with shared spaces.



## ■ KUIAS iCeMS Research Building

Research Building No.1 / Project Lab  
Research Building No.1 Annex

[Approx. 6,000m<sup>2</sup>]

In addition to laboratories for PIs, the building is equipped with the analysis center and common laboratories, as well as open office spaces and community spaces to advance cross-disciplinary research.



## ■ Faculty of Medicine Building B Institute for the Advanced Study of Human Biology

[Approx. 1,900m<sup>2</sup>]

In addition to laboratories for PIs, the building is equipped with the single-cell genome information analysis core and common laboratories, as well as open office spaces and community spaces to advance cross-disciplinary research.



# Partner Institutions

KUIAS enriches its research through close contact with the following domestic and international partners.

## | International Partners |

### MoU Partners

- Tata Institute of Fundamental Research National Centre for Biological Sciences (NCBS), India
- The Institute for Stem Cell Biology and Regenerative Medicine (inStem), India
- Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), India
- Vidyasirimedhi Institute of Science and Technology (VISTEC), Thailand
- Research and Development Center for Membrane Technology (CMT), Chung Yuan Christian University (CYCU), Taiwan
- School of Physical Science and Technology, ShanghaiTech University, China
- Zoological Society of San Diego d/b/a San Diego Zoo Global, USA
- AO Research Institute Davos (ARI), AO Foundation, Switzerland
- School of Environmental and Chemical Engineering (ECE), Shanghai University (SHU), China
- King Abdullah University of Science and Technology (KAUST), Saudi Arabia
- School of Materials Science and Engineering, South China University of Technology (SCUT), China
- Center for Self-assembly and Complexity (CSC), Institute for Basic Science (IBS), South Korea
- Department of Chemistry, Ulsan National Institute of Science and Technology (UNIST), South Korea
- The Institute of Materials Research and Engineering (IMRE), A\*STAR Research Entities, Singapore
- UNEP-Tongji Institute of Environment for Sustainable Development (IESD), China
- MacDiarmid Institute for Advanced Materials and Nanotechnology, New Zealand
- China Medical University Hospital (CMUH), Taiwan
- College of Engineering, Southern University of Science and Technology (SUSTech), China
- Max Delbrück Center for Molecular Medicine (MDC), Germany

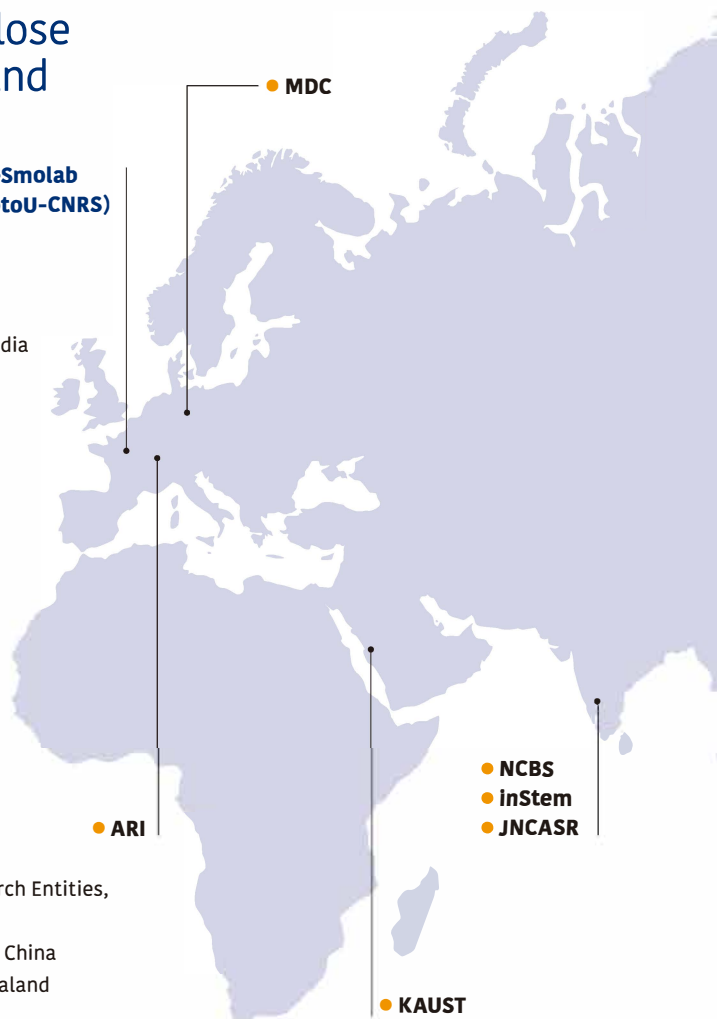
● IRP-Smolab (KyotoU-CNRS)

● MDC

● ARI

● NCBS  
● inStem  
● JNCASR

● KAUST



### Overseas Office (iCeMS)

- iCeMS Taiwan Office, Taiwan

### International Laboratories (iCeMS)

- Small Molecule Lab: IRP-Smolab (KyotoU-CNRS), France
- SUSTech-Kyoto University Advanced Energy Materials Joint Innovation Laboratory : SKAEM-JIL (KyotoU-SUSTech), China
- India Japan Initiative for Intelligent Biomaterials : INJA IN BIO, Japan

### Collaborative Laboratory (iCeMS)

- ZEISS-iCeMS Innovation Core, Japan

## KyotoU On-site Laboratories

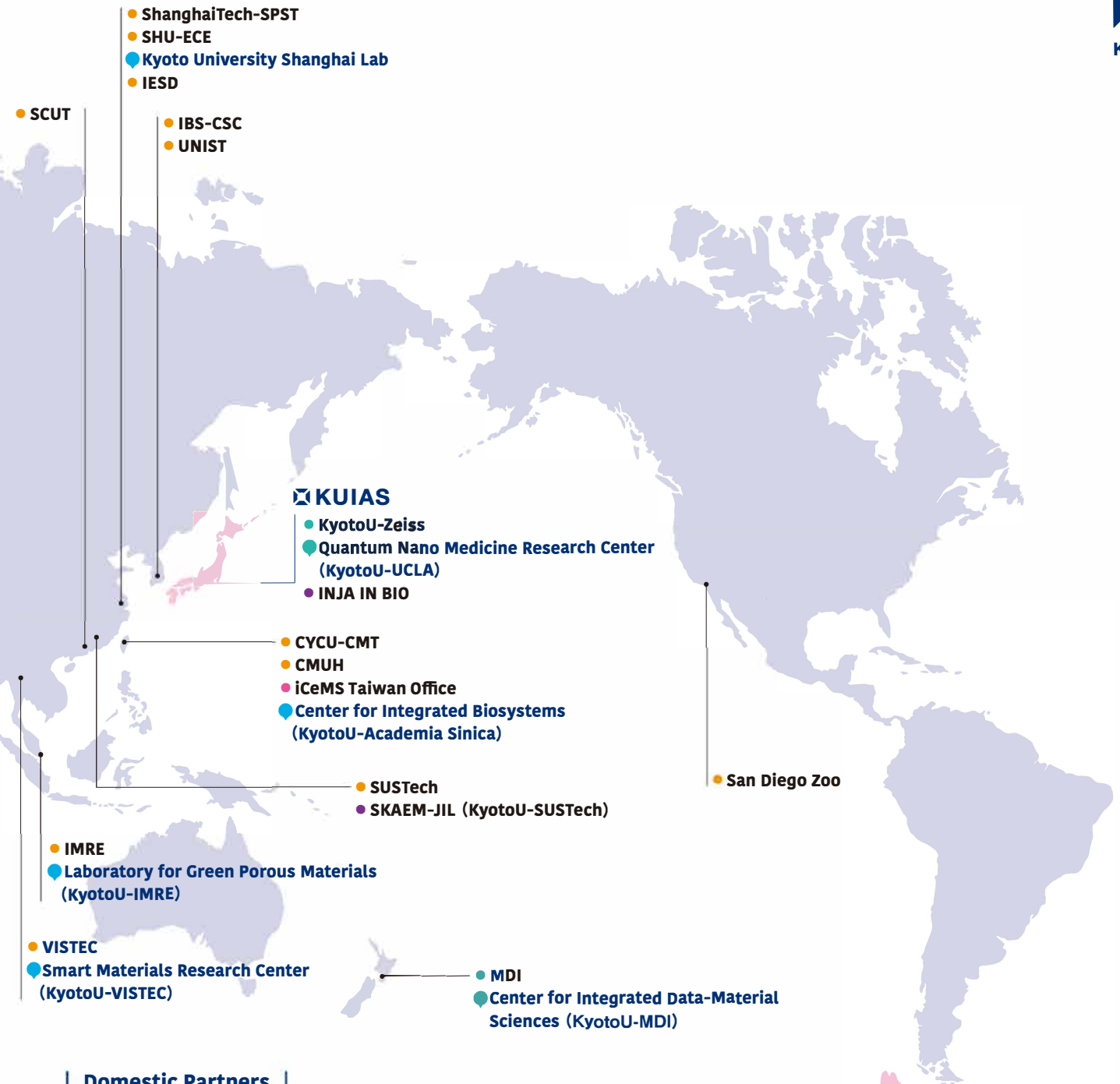


on-SITE Laboratory

Kyoto University launched an 'on-site laboratory' initiative in 2018 as part of a strategy implemented under the education ministry's Designated National University (DNU) program. The initiative involves KyotoU departments/centers and their overseas partners collaboratively establishing laboratories.

These centers are tasked with conducting world-leading advanced research, developing quality human capital, recruiting talented international students, and expanding collaboration with industrial partners.

- Smart Materials Research Center (KyotoU-VISTEC), Thailand
- Kyoto University Shanghai Lab, China
- Center for Integrated Biosystems (KyotoU-Academia Sinica), Taiwan
- Quantum Nano Medicine Research Center (KyotoU-UCLA), Japan
- Laboratory for Green Porous Materials (KyotoU-IMRE), Singapore
- Center for Integrated Data-Material Sciences (KyotoU-MDI), New Zealand



**| Domestic Partners |**

**University-level MoU Partner**

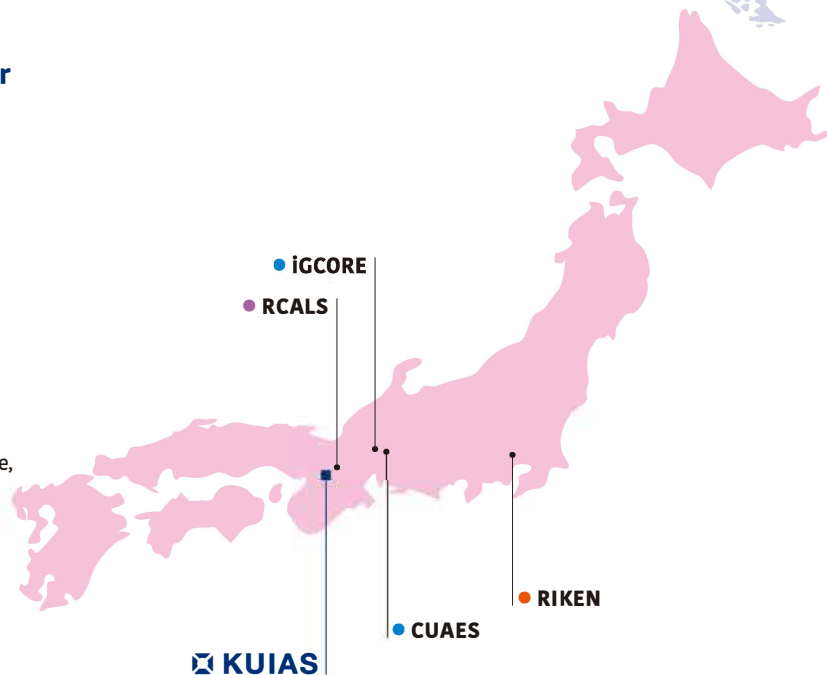
- RIKEN, Japan

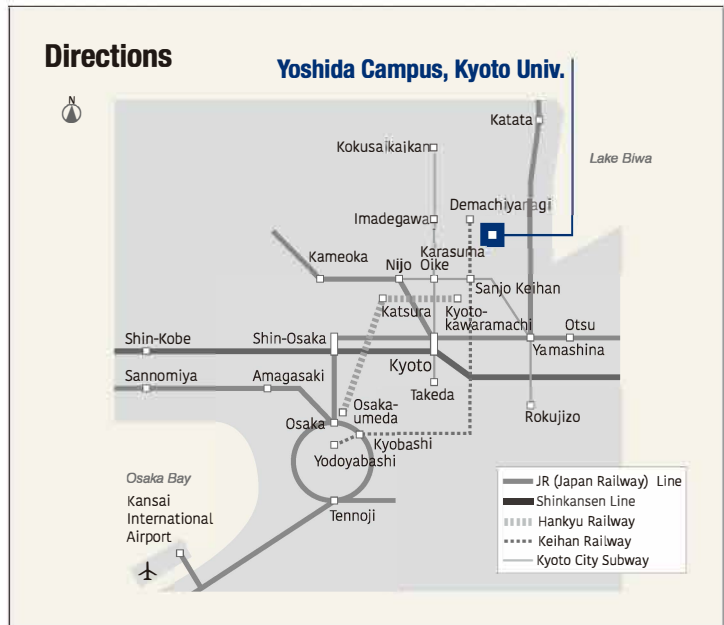
**MoU Partners**

- Academy of Emerging Sciences, Chubu University (CUAES)
- Institute for Glyco-core Research (iGCORE), Tokai National Higher Education and Research System

**Satellite (ASHBi)**

- Research Center for Animal Life Science, Shiga University of Medical Science (RCALS)





■ **KUIAS Main Building**

■ **KUIAS West Building**

Yoshida Ushinomiya-cho, Sakyo-ku, Kyoto  
One-minute walk from "Kyodai Seimon-mae"  
Stop (Kyoto City Bus)

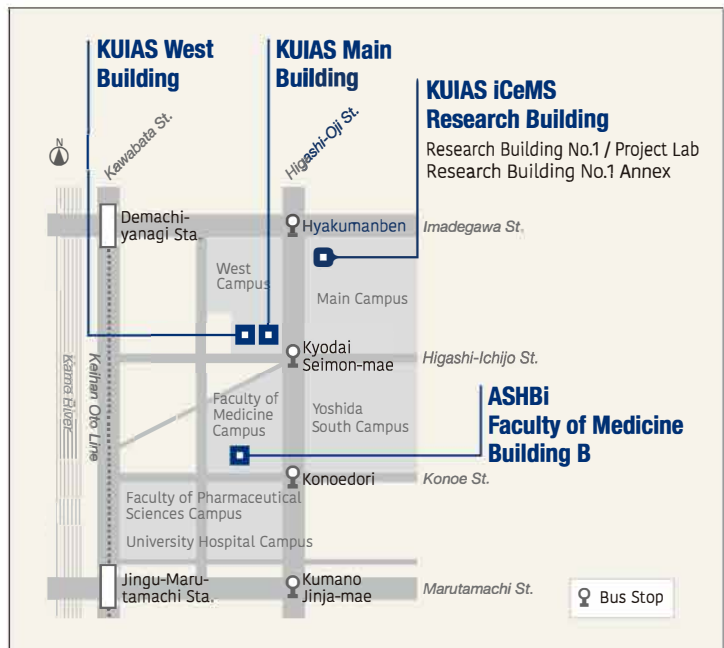
■ **KUIAS iCeMS Research Building**

- Research Building No.1 / Project Lab
- Research Building No.1 Annex

Yoshida Honmachi, Sakyo-ku, Kyoto  
One-minute walk from "Hyakumanben" Stop  
(Kyoto City Bus)

■ **Faculty of Medicine Building B  
Institute for the Advanced Study of  
Human Biology (ASHBi)**

Yoshida Konocho, Sakyo-ku, Kyoto  
Five-minute walk from "Konoedori" Stop  
(Kyoto City Bus)



**Kyoto University Institute  
for Advanced Study (KUIAS)**

Yoshida Ushinomiya-cho, Sakyo-ku, Kyoto 606-8501, Japan  
PHONE: +81-75-753-9753 E-mail: info@kuias.kyoto-u.ac.jp



Latest info  
on KUIAS