

MESO CONTROL

STEM CELLS

Table of Contents

- 02 Message from the Director
- 03 Mission Statement
 - Research Objectives
- 04 WPI Initiative
 - Management
- 05 History
- 06 Organization Chart
- 07 Research Groups
- 12 Center for iPS Cell Research and Application (CiRA)
- 13 People
 - Finance
 - Awards
- 14 Facilities

CHEMISTRY PHYSICS CELL BIOLOGY

Norio Nakatsuji

Director

Institute for Integrated Cell-Material Sciences
Kyoto University



Message from the Director

January 2009

iCeMS Embarks: Founded as a WPI Research Center

The Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) has launched the World Premier International Research Center (WPI) Initiative to promote pioneering research fields, in which Japan has its competitive edge, and to establish state-of-the-art institutes to bring the idea to fruition. The initiative is meant to create: 1) new cross-disciplinary fields stemmed from several different disciplines and 2) a global hub that draws top-notch researchers and promising young scientists from around the world.

To be "Globally Visible, Truly International"

As one of the only five research centers selected under the national initiative, the Institute for Integrated Cell-Material Sciences (iCeMS) aims to advance cell-material sciences, both of which Kyoto University is well known for, and to found an unprecedented institute in terms of research environment and management system, exerting itself to be a model for other institutes to follow.

Creating New Cross-Disciplinary Fields

Research at the iCeMS is built around two key concepts: "Meso-control" and "Stem cells." The iCeMS strives to develop a new scientific field through integration of biosciences, chemistry, material sciences and physics, followed by innovative technologies and applications.

Key Concept #1: Meso-Control

Meso scale is the size between 5 and 100 nm (1 nm is one millionth of 1 mm). In other words, it is a size of a cluster formed by several to several tens of bio-macromolecules in the cell. Meso-scale events are too complex for quantum mechanics, which is useful for the nano-scale events, whereas too simple for the effective application of statistical/classical mechanics — daily experience and knowledge we all have been accumulating. Practical applications in environmental technology, industries and medicine are anticipated to be realized once we find out the ways to control meso-scale molecular interactions and develop the groundbreaking technologies. It is not an overstatement to say that meso scale is like "a treasury filled with unexplored possibilities."

Key Concept #2: Stem Cells

The second key concept is "stem cells" — "cells" in a larger sense. The cell has acquired the strategies for the meso-control through evolution, realizing clean chemical reactions in ambient environments for the cell function, such as energy conversion, cell growth and differentiation.

Going Green, Staying Well: Science for the Environment and Well-Being

The iCeMS strives to understand and find out the ways to control meso-scale molecular (as well as atomic) interactions, namely the "artificial meso-control strategies," in order to innovate: 1) sustainable energy resources and eco-friendly chemical technologies, 2) regenerative medicine and 3) treatments such as administrating right dosage of drugs only to the specific target in the body.

Unprecedented in Japan: No Red-Tape, No Language Barrier, No Boundaries

One of the most pressing issues to be addressed for scientific research in Japan is that Japan has not been recognized neither as a global core that attracts high-caliber researchers nor a global hub for career development of the brightest young scientists. Chances are that Japan may lose its competitive edge even to the developing world — not to mention other developed nations. To tackle the problem, the iCeMS has designed a novel, unheard-of management system, employing: 1) top-down approach to quick decision-making, 2) English as its official language, 3) common-use labs and open offices, and so forth.

Our Roles in Society: Science Communication and Integrity

Scientists today are required to be able not only to express themselves to society in an apt, unbiased fashion, but also to maintain the highest integrity about their research activities. In order to meet the expectations, the iCeMS endeavors to grow into an institute where researchers can enhance their science communication skills and social literacy, aiming to nurture scientists of tomorrow.

Mission Statement

The Institute for Integrated Cell-Material Sciences (iCeMS) strives to:

1. **create new integrated disciplines of cell-material sciences based on the cross-disciplinary fields of chemistry, physics and cell biology.**
2. **become a global hub of career development for scientists.**



The iCeMS was established at Kyoto University on October 1, 2007 under the World Premier International Research Center (WPI) Initiative launched by the Japanese Ministry of Education, Culture, Sports, Science, and Technology (MEXT), aiming to "create new integrated disciplines of cell-material sciences based on the cross-disciplinary fields of chemistry, physics and cell biology" and "become a global hub of career development for scientists."

Research Objectives

The iCeMS aims at creating "Meso-Control Science" through the integration of physics, chemistry, and cell biology, establishing the science and technology of meso-control, based on the atomic and molecular interactions occurring in the scale of 5-100 nm, as the cells have designed themselves during evolution.

Namely, research conducted at the iCeMS is built around two key concepts: **Meso-Control** and **Stem Cells**. More specifically, we intend to establish the sciences of 1) **Meso-Control of Stem Cell Systems** and 2) **Meso-Control of Functional Architectures**.

Through technological innovations based on meso-control science, we will directly contribute to the human wellness in three main areas: A) environmentally-friendly chemistry by meso-control, B) detoxication and drug synthesis in the body, and C) regenerative medicine by controlling stem cells with smart materials.

Create New Hot Science for MESO-CONTROL

1. **Meso-Control of Stem Cell Systems**

2. **Meso-Control of Functional Architectures**



- **Eco-Friendly Chemistry** by Meso-Control
- **Detoxication and Drug Synthesis** in the body
- **Regenerative Medicine** by controlling stem cells with **Smart Materials**

Chemistry

Physics

Cell Biology

WPI Initiative

The World Premier International Research Center (WPI) Initiative launched by the Japanese Ministry of Education, Culture, Sports, Science, and Technology (MEXT) provides priority support for projects aimed at creating world-class research centers staffed at their core with the top-notch researchers. By achieving a very high research standard and providing an excellent research environment, the centers are expected to possess a level of "global visibility" that attracts highest-caliber researchers from around the world.



Management

Top-down Approach to Ensure Quick Decision Making

The director makes a wide variety of decisions for swift implementation. This is considered to be one of the key elements to develop the Institute for Integrated Cell-Material Sciences (iCeMS) into a world-class research center in the fast-changing environment.

English as its Official Language

English is used even in internal communication. This is to facilitate interaction among researchers from home and abroad so the iCeMS can become a truly international research center that draws highest-caliber scientists from around the world.

Interaction Among PI Groups

The iCeMS aims to develop a new scientific field through integration of cell biology, chemistry and physics. Interactions among researchers from different disciplines are crucial to achieve this goal. The iCeMS encourages close communication and reciprocal influence among researchers by not only creating suitable environment such as open offices and common-use laboratories but also holding cross-disciplinary seminars and initiating the "iCeMS Cross-Disciplinary Journal Club."

Incentives for Researchers

Merit-based salary system based on fair evaluation is adopted at the iCeMS in order to reward researchers with outstanding achievement and motivate others to follow them. The iCeMS strives to be a global hub of career development for scientists.

International Recruitment

All the positions of researchers at the iCeMS are advertised internationally to recruit highest-caliber researchers as well as most promising young researchers from across the world.

Female Scientists Encouraged

The iCeMS intends to support female scientists by 1) providing special assistance for child care and replacement posts for maternity leaves and 2) utilizing the university support center for female scientists. The iCeMS aspires to be the center where female scientists can excel in research activities as well as their male counterparts.

Top-notch Scientists in Society

Scientists today are required to keep the highest scientific integrity and to develop science communication skills to explain what they do in order to raise awareness of the research activities and obtain support from the general public. The iCeMS intends to nurture scientists with social literacy through a wide range of trainings and educational opportunities.

History

2007

- September 12** The iCeMS is selected for the World Premier International Research Center (WPI) Initiative by the Ministry of Education, Culture, Sports, Science and Technology (MEXT).
- October 1** The iCeMS is established at Kyoto University.
Prof. Norio Nakatsuji is named as founding director.
- December 19** The iCeMS holds the unveiling ceremony. (below)



2008

- January 22** The Center for iPS Cell Research and Application (CiRA) is established under the auspices of the iCeMS, Kyoto University.
Director Nakatsuji appoints Prof. Shinya Yamanaka as director of the CiRA.
- February 19** The iCeMS holds the inauguration ceremony.
- April 28** The iCeMS opens a new laboratory on Katsura Campus of Kyoto University.
- September 30** The iCeMS opens a research building as part of the iCeMS Complex 2.



2009

- April 28** The iCeMS holds the opening ceremony of the iCeMS Complex 1. (right)

Organization Chart

As of May 1, 2009

Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University

Executive Board



Deputy Director
Kitagawa, Susumu



Director
Nakatsuji, Norio



Administrative Director
Tomita, Shinji



Chairman of the Board of Pls
Ueda, Kazumitsu

Center for iPS Cell Research and Application (CiRA)



Center Director
Yamanaka, Shinya

Basic Biology Dept.

Differentiation
Induction Dept.

Clinical
Applications Dept.

Core Facilities Dept.

Research Strategy Division

Head
Hayashi, Hideya

Principal Investigators (PI)



Nakatsuji,
Norio



Kitagawa,
Susumu



Ueda,
Kazumitsu



Agladze,
Konstantin



Chen,
Yong



Harada,
Yoshie



Heuser,
John



Hashida,
Mitsuru



Hiragi,
Takashi



Imahori,
Hiroshi



Kengaku,
Mineko



Kiso,
Makoto



Kusumi,
Akihiro



Takano,
Mikio



Tanaka,
Koichiro



Sugiyama,
Hiroshi



Uesugi,
Motonari



Yamanaka,
Shinya

Satellite: Gifu University



Kiso, Makoto

Innovation Management Group



Sengoku, Shintaro

Science Communication Group



Kato, Kazuto

Administration

Administrative Director
Tomita, Shinji

Deputy Administrative
Director
Yamazaki, Takeshi

CiRA Support Office

Head / Deputy
Administrative Director
Nishi, Kiyoshi

Partner institutions

- Bionanotechnology Interdisciplinary Research Centre, The University of Oxford
- Wellcome Trust Centre for Stem Cell Research, The University of Cambridge
- National Centre for Biological Sciences (NCBS), Bangalore, India
- Max Planck Institute for Molecular Cell Biology and Genetics
- California NanoSystems Institute, UCLA
- Membrane Center, Purdue University
- RIKEN Center for Developmental Biology (CDB)

Advisory Committee

- Watt, Fiona (The University of Cambridge)
- Eng-Hin, Lee (The University of Singapore)
- Baird, Barbara (Cornell University)
- Poeppelmeier, Kenneth R. (Northwestern University)
- Schüth, Ferdi (Max-Planck-Institut für Kohlenforschung)
- Choquet, Daniel (Université de Bordeaux 2)
- Takeichi, Masatoshi (RIKEN Center for Developmental Biology)
- Osumi, Noriko (Tohoku University)
- Morokuma, Keiji (Kyoto University)

Research Groups

As of May 1, 2009

Nakatsuji, Norio | Stem-Cell Biology, Developmental Biology

Faculty Member

Nakatsuji, Norio (Professor)
Jung, Dongju (Lecturer)



nakatsuji-g@icems.kyoto-u.ac.jp

Research Overview

This group investigates molecular and chemical regulation of stem cells and application for medicine and drug discovery, focusing on control of proliferation and differentiation of embryonic and other pluripotent stem cells by multiple approaches including stem cell engineering and chemical biology. It is also interested in molecular and cellular mechanisms of differentiation of mammalian germ cells such as spermatogenic cells in mouse testes.

Kitagawa, Susumu | Coordination Chemistry, Biological Inorganic Chemistry, Biomaterial Science

Faculty Member

Kitagawa, Susumu (Professor) Furukawa, Shuhei (Associate Professor)
Ueno, Takafumi (Associate Professor) Matsuda, Ryotaro (Associate Professor)



kitagawa-g@icems.kyoto-u.ac.jp

Research Overview

Our challenge is to develop new biomaterials based on coordination chemistry and protein engineering. We construct coordination polymer complexes in discrete spaces of protein assemblies and prepare metal oxides and pure metal particles in meso-scale protein cages. These bio-inspired materials will serve as chemical reactors for detoxication and drug synthesis in a cell.

Ueda, Kazumitsu | Cellular Biochemistry

Faculty Member

Ueda, Kazumitsu (Professor)



ueda-g@icems.kyoto-u.ac.jp

Research Overview

This group investigates human ATP-binding cassette superfamily proteins (ABC proteins) and cell adhesion molecules. Human 49 ABC proteins maintain the specific intracellular environment and glucose and lipid homeostasis in the body. Cell adhesion molecules regulate cell proliferation, survival, differentiation, and migration, in a coordinated manner with growth factor signals. We are studying the physiological functions and molecular mechanisms of ABC proteins and cell adhesion molecules to help improve and maintain our health.

Agladze, Konstantin | Biophysics, Non-linear Science

Faculty Member

Agladze, Konstantin (Professor)
Magome, Nobuyuki (Assistant Professor)



agladze-g@icems.kyoto-u.ac.jp

Research Overview

The research areas of this laboratory are physics and biophysics of excitable and self-organizing systems. Special attention is paid to the mechanisms of transition to a chaotic state in cardiac tissues. One of our goals is to create a new method of regenerative medicine of heart based on fabrication of tissue implants suitable for the reparation of the heart conducting system.

Chen, Yong | Nano-biotechnology**Faculty Member**

Chen, Yong (Professor)



chen-g@icems.kyoto-u.ac.jp

Research Overview

We explore the potentiality of microfluidic systems and nanofabrication technologies in life sciences. Particular attention is paid to the development of new tools for single cell manipulation, cell sorting and high throughput parameter screening. We are also interested in the creation of new biophysical and biochemical models which are relevant fundamental research purposes.

Harada, Yoshie | Single-molecule Physiology**Faculty Member**

Harada, Yoshie (Professor)

Yokota, Hiroaki (Lecturer)



harada-g@icems.kyoto-u.ac.jp

Research Overview

We are investigating single-molecule dynamic processes of DNA-protein interactions in DNA replication, repair and recombination which are the most essential for cellular metabolism by developing novel single-molecule microscopy. This technology enables us to perform studies by direct visualization of single protein localization and displacement along single DNA that is mechanically manipulated. This requires ultra high precision and sensitivity. In achieving this goal our understanding of fundamental biological functions and the several tens of nm-sized "mesoscopic" world is promoted, and ultimately attracts attention of a great interdisciplinary nature.

Hashida, Mitsuru | Biopharmaceuticals**Faculty Member**

Hashida, Mitsuru (Professor)



hashida-g@icems.kyoto-u.ac.jp

Research Overview

The main emphasis of the Department is on the development of methods of controlled drug delivery such as:

1. Rational design of macromolecular and particulate carriers for drug targeting
2. In vivo disposition control and targeting of proteins by chemical modification
3. Cell specific delivery of genes
4. Development of carrier systems employing new materials such as carbon nanotube
5. In silico prediction of mucosal and skin absorption of drugs

Heuser, John | Biophysics, Cell Biology**Faculty Member**

Heuser, John (International Affiliate)



heuser-g@icems.kyoto-u.ac.jp

Research Overview

Dr. Heuser's laboratory is devoted to visualizing all sorts of biological samples in the electron microscope, everything from whole cells at the 'macro' end of the scale, down to individual macromolecules and macromolecular assemblies or "machines" on the mesoscale. The laboratory is especially involved in developing *new procedures of sample preparation* for the electron microscope, procedures that can produce a more natural, realistic, and "life-like" appearance of everything in the electron microscope. To accomplish this, the laboratory has pioneered what is called the "quick-freeze/deep-etch" technique of electron microscopy, and has disseminated throughout the world all the equipment and procedures needed to carry out this special procedure. With this technique, Dr. Heuser's laboratory has succeeded in capturing many rapid and fleeting biological events, including the processes of nerve transmission, muscle contraction, viral fusion, and most recently, cell wounding and healing in the process of DNA-transfection.

Hiiragi, Takashi | Developmental Biology**Faculty Member**

Hiiragi, Takashi (Professor)



hiiragi-g@icems.kyoto-u.ac.jp

Research Overview

The primary research interest is the understanding of totipotency at the cellular and molecular level. The lab investigates unique principles in the mammalian development. Current projects address the molecular programs operating in the early mouse embryo for polarity establishment in space and time, and for centrosome inheritance.

Imahori, Hiroshi | Photochemistry**Faculty Member**

Imahori, Hiroshi (Professor)

Murakami, Tatsuya (Assistant Professor)



imahori-g@icems.kyoto-u.ac.jp

Research Overview

This group aims to realize artificial photosynthesis inspired by natural photosynthesis. Particular attention is paid to the development of artificial photosynthetic systems including organic solar cells and drug delivery systems.

Kengaku, Mineko | Developmental Neurobiology, Cell Biology**Faculty Member**

Kengaku, Mineko (Associate Professor)



kengaku-g@icems.kyoto-u.ac.jp

Research Overview

The mammalian brain comprises of approximately 10-100 billions of neurons that are orderly arranged in cortices and nuclei for integration into specific neural circuits. During development, neurons directionally migrate from the birthplace to their destination within the cortex, and then arborize well-patterned dendrites and axons to contact with their specific synaptic counterparts. The major goal of our research is to clarify the mechanisms of cortical lamination in the brain. We seek to identify the molecular signals regulating neuronal migration and dendrite patterning. We also aim to develop imaging techniques for real-time observation of molecular and cellular dynamics of neuronal migration and dendrite patterning.

Kiso, Makoto | Glycotechnology**Faculty Member**

Kiso, Makoto (Professor)

Ando, Hiromune (Associate Professor)



kiso-g@icems.kyoto-u.ac.jp

Research Overview

This satellite pursues the elucidation of the molecular basis underlying the multifunctions of carbohydrates in various biological processes by chemical methods and its applications in medicine. Our research is focused on the development of versatile and powerful synthetic methodology of carbohydrates, and the creation of the Glycobank possessing a wide spectrum of biologically-significant carbohydrates and functionalized carbohydrate probes. Utilizing the full entries of the Glycobank, we are going to conduct cross-disciplinary studies with molecular biology, developmental biology, structural biology, biophysics for the understanding and application of biological functions of carbohydrates.

Kusumi, Akihiro | Single-Molecule Cell Biophysics

Faculty Member

Kusumi, Akihiro (Professor) Fujiwara, Takahiro (Assistant Professor)
Suzuki, Kenichi (Assistant Professor)



kusumi-g@icems.kyoto-u.ac.jp

Research Overview

Our laboratory is dedicated to understanding membrane mechanisms and methodology development for single-molecule observation and manipulation at nanometer precisions in living cells. The development is carried out simultaneously with its application to the studies of nano-bioprocesses occurring in living cells, in particular, signal transduction in the cell membrane and the formation and remodeling of the neuronal network. The smooth liaison between physics/engineering and biomedicine is a key for our biomedical research and methodology developments. On the basis of the knowledge of nano-bioprocesses learned in the cells (e.g., partitioning of the plasma membrane into submicron compartments and transient formation of signaling platforms in the cell membrane) and the single-molecule bionanotechnology developed here, we envisage the next-generation nanotechnology, regenerative medicine, and drug discovery protocols.

Sugiyama, Hiroshi | Chemical Biology

Faculty Member

Sugiyama, Hiroshi (Professor)
Endo, Masayuki (Associate Professor)



sugiyama-g@icems.kyoto-u.ac.jp

Research Overview

Sugiyama group's research interests involve the chemical biology of nucleic acids. Using the tools of organic synthesis and molecular biology, the Sugiyama group is defining the chemical principles underlying the recognition, reactivity and structure of nucleic acids. The group utilizes a chemical approach in following areas: Design of highly efficient sequence-specific DNA acting agents, Design of unnatural nucleic acid for understanding of nucleic acid structure and function, and Development of a general method probing DNA local conformation in vivo. The long-range goal is creation of artificial genetic switches for iPS cell production and targeted cell differentiation and treatment of many diseases.

Takano, Mikio | Solid-State Chemistry

Faculty Member

Takano, Mikio (Professor) Koyanaka, Hideki (Associate Professor)
Yamamoto, Shinpei (Assistant Professor)



takano-g@icems.kyoto-u.ac.jp

Research Overview

We are exploring for new functions of ubiquitous metallic elements like iron (Fe) and manganese (Mn) for the purpose of contributing to the promotion of human welfare and peaceful sustainability. A certain kind of manganese oxide, R-MnO₂, has been found to convert carbon dioxide into formaldehyde and other organic substances, and factors determining the efficiency are now being clarified using various experimental techniques. In another program we are collaborating with biochemists to develop biomagnetic science in nano to meso-scaled space, to which a home-made nano-sized magnet, L10-FePt, will be served.

Tanaka, Koichiro | Terahertz Optical Science

Faculty Member

Tanaka, Koichiro (Professor)
Shirai, Masanobu (Assistant Professor)



tanaka-g@icems.kyoto-u.ac.jp

Research Overview

This research group investigates terahertz optics and its application to the materials science and biology. Current main target of the group is high power THz generation, non-linear THz spectroscopy and near-field imaging of biological systems.

Uesugi, Motonari | Chemical Biology**Faculty Member**

Uesugi, Motonari (Professor)
Sato, Shinichi (Assistant Professor)



uesugi-g@icems.kyoto-u.ac.jp

Research Overview

In human history, small organic molecules have been utilized for improving human health and for revealing secrets of life. Discovery or design of small organic molecules with unique biological activity permits small-molecule-initiated exploration of biology and further understanding of human diseases. Our laboratory has been discovering small organic molecules that modulate transcription or differentiation to use them as tools to explore biology.

Yamanaka, Shinya | Stem Cell Biology, Developmental Engineering**Faculty Member**

Yamanaka, Shinya (Professor)	Okita, Keisuke (Assistant Professor)
Nakagawa, Masato (Assistant Professor)	Yoshida, Yoshinori (Assistant Professor)
Takahashi, Kazutoshi (Assistant Professor)	Aoi, Takashi (Assistant Professor)



yamanaka-g@icems.kyoto-u.ac.jp

Research Overview

We first succeeded in generation of induced pluripotent stem (iPS) cells from mouse embryonic or adult fibroblasts by introducing four genes - Oct3/4, Sox2, c-Myc, and Klf4. iPS cells are similar to embryonic stem (ES) cells in terms of morphology, proliferation and pluripotency. Following the achievement, we also established iPS cells from adult human dermal fibroblasts by introducing the same four factors. To reduce risks of tumorigenesis, we successfully created iPS cells without using c-Myc, a known proto-oncogene. Our recent research also showed that the four genes can be effectively introduced into mouse fibroblasts by using a pair of plasmid vectors, instead of retrovirus vectors, which can be randomly inserted into the genome and cause cancer. By improving iPS cell technology, we would like to dedicate iPS cells to applications, pathogenesis studies, drug screening, toxicology, and future regenerative medicine.

Innovation Management Group (Sengoku, Shintaro)**Faculty Member**

Sengoku, Shintaro (Associate Professor)



sengoku-g@icems.kyoto-u.ac.jp

Research Overview

Universities are nowadays required to be fully capable of providing intellects for social usage with the current presence on advanced research and education. Subsequently, it requests us for significant changes in the mindset, structures, systems and management to industrialise leading findings and inventions. Our group explores a novel management model aiming to materialise the true innovation. To achieve the purpose we define the transaction (i.e. communication and interaction between substances) as a basal element for intellectual productions and develop the transaction-based management styles and social systems.

Science Communication Group (Kato, Kazuto)**Faculty Member**

Kato, Kazuto (Adjunct Associate Professor)
Kano, Kei (Assistant Professor)



kato-g@icems.kyoto-u.ac.jp

Research Overview

Recently, science has been developing rapidly and its influence on society is more significant than ever -- all the more reason for researchers to recognize the social impact and meaning of their research. In order to do that, scientists today are expected to have active interactions with the general public. Our group has been developing and evaluating the teaching program for researchers to enhance "science communication" skills, in a bid for better, mutual relations among "researchers in different fields" and between "scientific communities and society."

Center for iPS Cell Research and Application (CiRA)

Overview

In November 2007 Prof. **Shinya Yamanaka**, a principal investigator of the iCeMS, reported generation of induced pluripotent stem (iPS) cells from human fibroblasts. In order to further advance iPS cell research, the Center for iPS Cell Research and Application (CiRA) was established under the auspices of the iCeMS in January 2008, only two months after the announcement. Prof. **Norio Nakatsuji**, director of the iCeMS, appointed Prof. **Yamanaka** as director of the CiRA.



Organization

Its faculty consists of the following four departments:

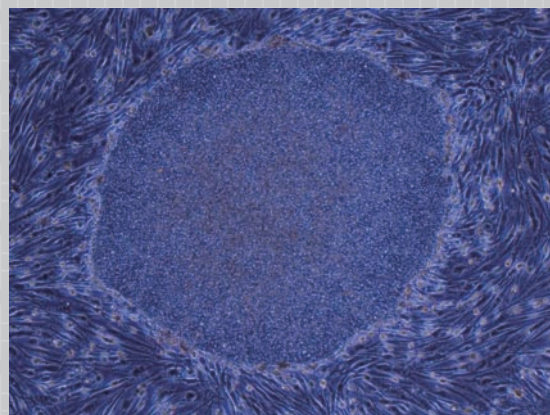
- Basic Biology Dept. [Head] Director / Prof. Shinya Yamanaka
- Differentiation Induction Dept. [Head] Deputy Director / Prof. Junya Toguchida
- Clinical Applications Dept. [Head] Deputy Director / Prof. Tatsutoshi Nakahata
- Core Facilities Dept. [Head] Visiting Prof. Ryuzo Torii

The Research Strategy Division, led by Prof. Hideya Hayashi, has been established in order to draw up mid- and long-term research strategies for the CiRA, examining domestic and overseas research trends. The division comprises: 1) Research Management Office, 2) Contract Management Office, 3) Intellectual Property Office and 4) International Public Relations Office.

Please go to the CiRA website at www.icems.kyoto-u.ac.jp/cira for further details.



Prof. Shinya Yamanaka giving a speech at iCeMS Inauguration Ceremony held in February 2008



Human iPS cells derived from adult human dermal fibroblasts

People

As of May 1, 2009

Professor	Associate Professor	Lecturer	Assistant Professor	Research Associate	Research Support Staff	Administrative Staff	Total
25	13	4	15	55	76	35	223

Finance

As of May 1, 2009
* USD 1 = 100 Yen

WPI Grant

Million USD / 100 Million Yen

FY 2007	6.8
FY 2008	15.6

Competitive Research Grant

Million USD / 100 Million Yen

FY 2007	6.4
External Research Funding	4.8
MEXT/JSPS Grants-in-Aid for Scientific Research	1.5
Donations	0.1
FY 2008	35.6
External Research Funding	23.6
MEXT/JSPS Grants-in-Aid for Scientific Research	5.6
Donations	6.3

MEXT: Ministry of Education, Culture, Sports, Science and Technology
 JSPS: Japan Society for the Promotion of Science
 (a non-profit, independent administrative institution under the auspices of the MEXT)

Awards

that iCeMS scientists recently earned

Jan. 2009	The Chemical Society of Japan Award 2008	Kitagawa, Susumu
Nov. 2008	Medal of Honor with Purple Ribbon 2008	Yamanaka, Shinya
Nov. 2008	Meira and Shaul G. Massry Prize	Yamanaka, Shinya
Apr. 2008	Humboldt Research Award	Kitagawa, Susumu
Mar. 2008	The Young Scientists' Prize for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology	Ueno, Takafumi
Feb. 2008	Robert Koch Prize 2008	Yamanaka, Shinya
Jan. 2008	Asahi Award 2007	Yamanaka, Shinya
Dec. 2007	NISTEP Prize 2007 by the National Institute of Science and Technology Policy of the Ministry of Education, Culture, Sports, Science and Technology	Imahori, Hiroshi
Nov. 2007	The 25th Osaka Science Prize	Imahori, Hiroshi
Sep. 2007	Thomson Scientific Research Front Award 2007	Takano, Mikio
Feb. 2007	Gifu Newspaper Award	Kiso, Makoto

Facilities

As of May 1, 2009

* The building names are subject to change.



iCeMS Complex 1

Approx. 5,000 m² of floor space

The iCeMS Complex 1 serves as the headquarters and consists of two buildings:

- Main Building*
- West Wing*

Main Building*:

Located at the Higashiyama-Higashiichijo intersection of Higashi-oji St. and Higashi-ichijo St., right across from the university headquarters

iCeMS Complex 2

Approx. 6,000 m² of floor space

The iCeMS Complex 2 consists of three buildings:

- Research Building 1* (Project Lab)
- Research Building 2* | To be completed in September 2009
- Research Building 3* | To be completed in August 2010



Open Office (in perspective):

Shared by research groups from various fields, aiming to promote cross-disciplinary research



Research Building 1* (Project Lab):

Located at the Hyakumanben intersection of Higashi-oji St. and Imadegawa St., only 220 meters away from the iCeMS Complex 1

Center for iPS Cell Research and Application (CiRA)

Approx. 12,000 m² of floor space

(in perspective)

Located on West Campus of the University Hospital
(To be completed in February 2010)



Directions

Yoshida Campus, Kyoto University

iCeMS Complex 1

- Main Building*
- West Wing*

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

iCeMS Complex 2

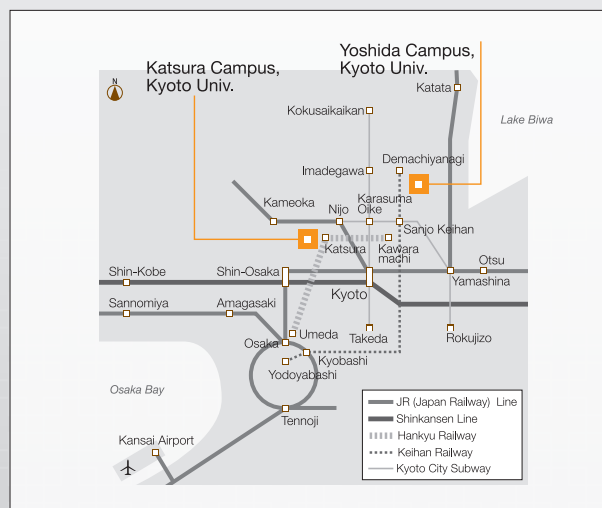
- Research Building 1*
- Research Building 2*
- Research Building 3*

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

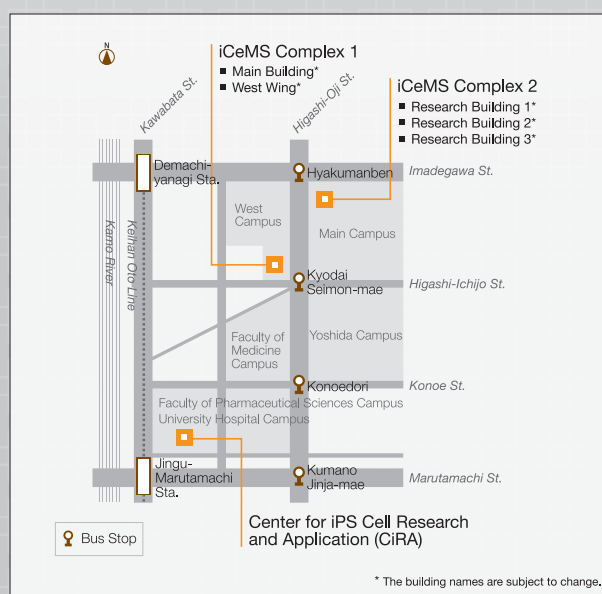
Center for iPS Cell Research and Application (CiRA)

53 Shogoin Kawahara-cho, Sakyo-ku, Kyoto
 Five-minute walk from Jingu-Marutamachi Station
 (Keihan Railway)

* The building names are subject to change.



Directions to iCeMS, Kyoto University

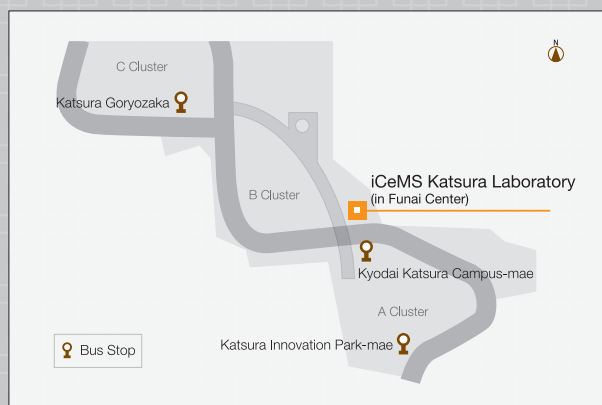


Yoshida Campus, Kyoto University

Katsura Campus, Kyoto University

iCeMS Katsura Laboratory (in Funai Center)

Kyoto-daigaku Katsura, Nishikyo-ku, Kyoto
 Five-minute walk from "Kyodai Katsura Campus-mae"
 Stop (Kyoto City Bus)



Katsura Campus, Kyoto University

iCeMS Brochure | Issued: January 2009 | Revised: October 2009

Copyright © 2009 Institute for Integrated Cell-Material Sciences, Kyoto University. All rights reserved.

Email: info@icems.kyoto-u.ac.jp

Phone: 81-75-753-9753 (Int'l) / 075-753-9753 (Domestic)

Fax: 81-75-753-9759 (Int'l) / 075-753-9759 (Domestic)

Address: Yoshida Ushinomiya-cho, Sakyo-ku, Kyoto 606-8501, Japan

URL: www.icems.kyoto-u.ac.jp