

Graduate School of Life Science, Hokkaido University

# BIOSYSTEMS SCIENCE COURSE



Graduate School of Life Science

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Professor

**Kazuma Tanaka**

<https://researchmap.jp/read0006783>



Assistant Professor

**Takuma Kishimoto**

<https://researchmap.jp/kishitaku-76>



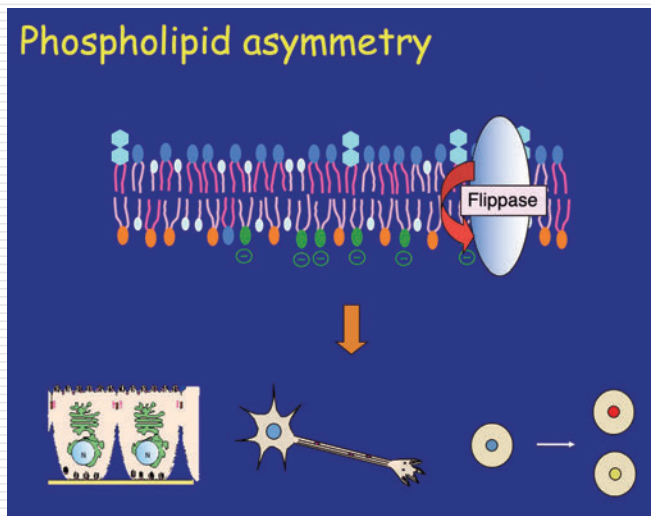
Assistant Professor

**Tetsuo Mioka**

<https://researchmap.jp/t-mioka?lang=en>

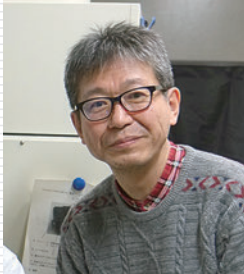
## Study abstract

Biomembranes are essential for multiple cellular activities including cell shape, cell polarity, vesicle transport, and organelle functions. In the plasma membrane, phospholipids are asymmetrically distributed across bilayer leaflets. This phospholipid asymmetry is conserved from yeast to mammalian cells. Flippases are type 4 P-type ATPases that play an essential role in generating phospholipid asymmetry. The aim of our laboratory is to elucidate the physiological significance of phospholipid asymmetry by using yeast as a model organism.



### Keywords

lipid asymmetry, flippase, cell polarity, vesicle transport, molecular cellular biology, molecular genetics, yeast



Professor

**Tomomichi Fujita**

<https://researchmap.jp/read0096750?lang=en>



Assistant Professor

**Teh Ooi Kock**

<https://researchmap.jp/okteh?lang=en>



Assistant Professor

**Satoshi Naramoto**

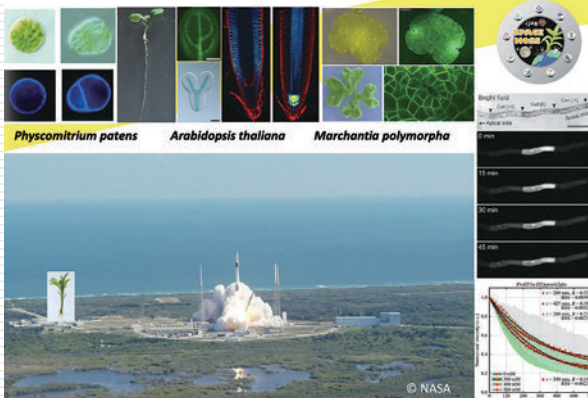
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## Study abstract

We use plants to investigate molecular mechanisms of their development, environmental resistance and evolution. We aim to unlock the secrets of plant cells and to understand how plants control their growth, differentiation and adaptation from an evolutionary view point. To this end, we use basal land plants such as *Physcomitrium patens* (a moss), *Marchantia polymorpha* (a liverwort), and *Arabidopsis thaliana* (a flowering plant) as our model plants. Our research topics are as follows: 1) To

unveil molecular mechanisms of cell proliferation, differentiation, regeneration and totipotency in plant cells. 2) To uncover the crosstalk between environmental responses and developmental programs – then, aiming to develop plants that grow well even in extreme environments. 3) To understand the evolutionary road map of multicellulalization in land plants. 4) To understand how plants can grow or adapt even under extrem environmental conditions such as in the outerspace.

### Laboratory of Plant Evolutionary and Developmental Biology



### Keywords

abiotic stress, abscisic acid, *Arabidopsis thaliana*, asymmetric cell division, auxin, bryophytes, cell-cell communication, cell cycle regulation, cell fate determination, cell polarity, cell proliferation, chloroplast division, differentiation, eco-evo-devo, hypergravity, JAXA, *Marchantia polymorpha*, membrane trafficking, microgravity, molecular & cell biology, multicellularity, organelle size determination, photosynthesis, *Physcomitrium patens*, plant stem cell, plasmodesmata, polar auxin transport, polarotropic response, signaling, space biology, "Space Moss", stress adaptation, symmetry breaking



## Study abstract

The systems controlling the switching of cellular states among proliferation, differentiation and regulated death can be affected by various environmental stress factors including carcinogens as well as reactive oxygen species induced by stress factors. We focus on the functional analyses of protooncogen products that are also involved in diseases other than cancer.



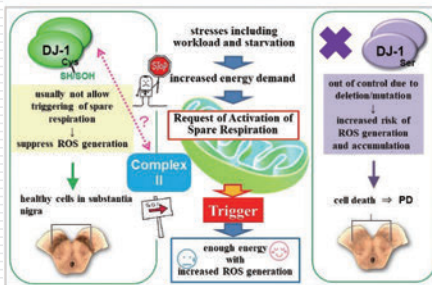
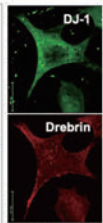
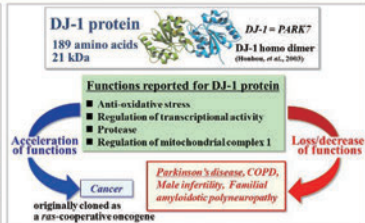
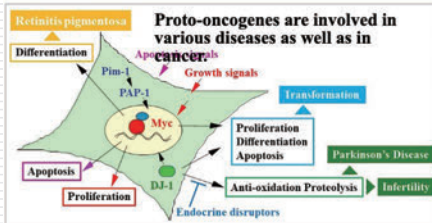
Professor

**Sanae Ariga**

[https://researchmap.jp/SanaeAriga\\_Hokudai?lang=en](https://researchmap.jp/SanaeAriga_Hokudai?lang=en)

## Environmental Molecular Bioscience Laboratory / Prof. Sanae Ariga

**Functional analyses of protooncogenes product proteins involved in various diseases other than cancer aiming at clarification of pathogenetic mechanisms and designing new drugs/therapies**



- ✓ **DJ-1, one of the protooncogenes we cloned, is identical to PARK7 responsible for familial Parkinson's disease.**
- ✓ **Mutagens and other environmental stresses induce oxidative stress in cells.**
- ✓ **DJ-1 protein sorts cellular responses to stresses by altering activities according to oxidation status.**
- ✓ **DJ-1 protein may regulate mitochondrial respiration to manage ROS risk.**



## Keywords

cell proliferation/differentiation/transformation/regulated death, biochemistry, molecular biology, cell biology, higher animals, protooncogenes, oxidative stress, neurodegenerative diseases, signal response



Associate Professor

**Masaaki K. Watahiki**  
<https://researchmap.jp/watahiki>

## Study abstract

Plants are commonly considered as inanimate and “still life” objects, however, we are simply limited in our abilities to directly sense their movement in our temporal sense. Upon close inspection with time-lapsed photography, it becomes evident that plants are very animated as revealed by their dynamic movements and developments. The plant hormone “Auxin” has a central functional role in plant morphogenesis. The main focus of this laboratory pertains to the study of “Early-Auxin Inducible Genes” and to investigate the functional roles of auxin in the synthesis of new organs (Organogenesis). We primarily utilize Arabidopsis as a functional model system for both forward and reverse genetics. In addition, we also use both potato and carrot as additional models.

**WATAHIKI Laboratory**  
We study for Auxin and Morphogenesis

**Auxin response** ← **Plant morphogenesis**

Auxin response in lateral root primordia

aberrant meristem

Gentioformin

**Spatiotemporal gene regulation**

**Intact**      **Cut**

**Organ regeneration in plants**

**Luminescence imaging**      **Bioluminescence marker**

**Genetic study of auxin mutants**

### Keywords

Auxin, feedback regulation, gene expression, molecular biology, plant physiology, genetics, plants, Arabidopsis, carrot, potato



## Study abstract

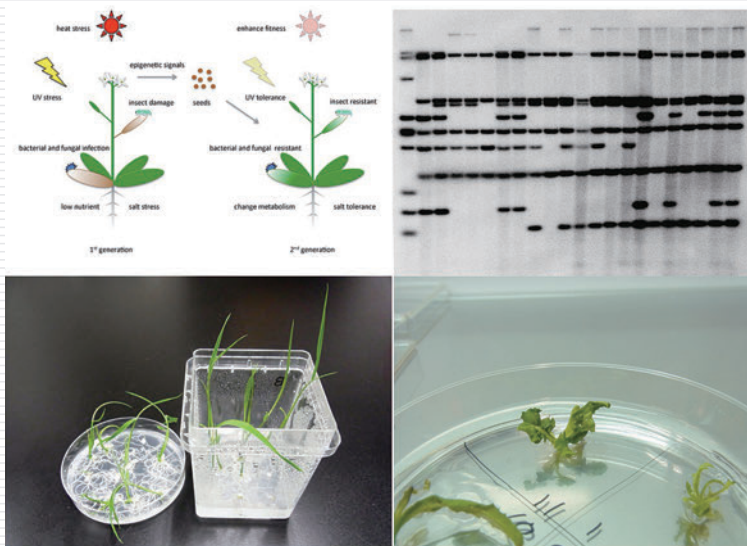
Gene expressions and transposon activations are affected by environmental stress. In nature, high copy numbers of transposons are conserved in many species. This may imply that transposons have been activated by environmental stress and changed the genome structure of a host genome. Sometimes the mutation promotes genome evolution and gene diversity that can adapt in a new environment. We study the effects of environmental stress in plants. We focus on the regulatory mechanisms of stress-activated transposons and analyze the relationships between the transposons and the host genome. Most of the transposons are silenced because of their methylated DNA and histone modifications. However, under specific conditions, transposons can be activated and transposed. Our interest is to understand how environment affects transposon activation in nature.



Associate Professor

**Hidetaka Ito**

<https://researchmap.jp/read0150035?lang=en>



### Keywords

environmental adaptation, transposon, plant molecular genetics, epigenetics, plant breeding, environmental stress, evolution



Associate Professor  
**Takeo Sato**  
<https://researchmap.jp/takeohp>



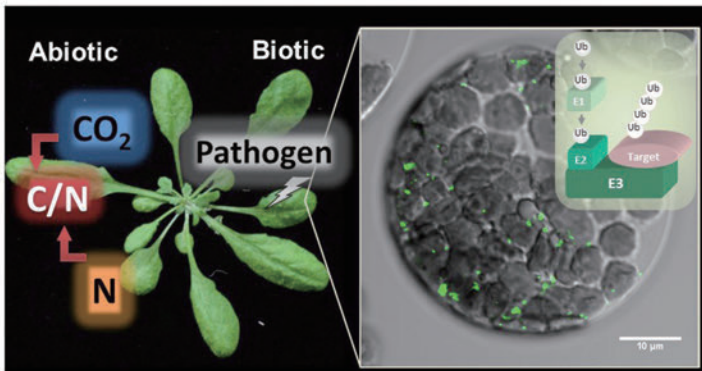
Assistant Professor  
**Junpei Takagi**  
<https://researchmap.jp/7000009908?lang=en>

## Study abstract

The ability to sense and respond to environmental stimuli is critical for the growth of all living organisms. Plants have developed sophisticated mechanisms to robustly monitor and appropriately respond to the dynamic changes of environment stresses due to their immobility. The main focus of our laboratory is to reveal the

molecular mechanism of excellent environmental adaptation of plants. We are especially focusing on adaptation strategies against “nutrient stress” and “pathogen attack (plant immunity)”, which have a great impact on plant growth and productivity. In addition to physiological analyses, we also perform genetics, cell biology and biochemical analyses to elucidate the function of key signaling proteins and metabolic enzymes.

## Molecular mechanisms regulating plant adaptation to environmental stresses



### Keywords

environmental adaptation, nutrient stress responses, molecular biology, plant science, membrane trafficking, ubiquitin signals, kinase, metabolism, plant immunity, organelle, proteomics, live cell imaging



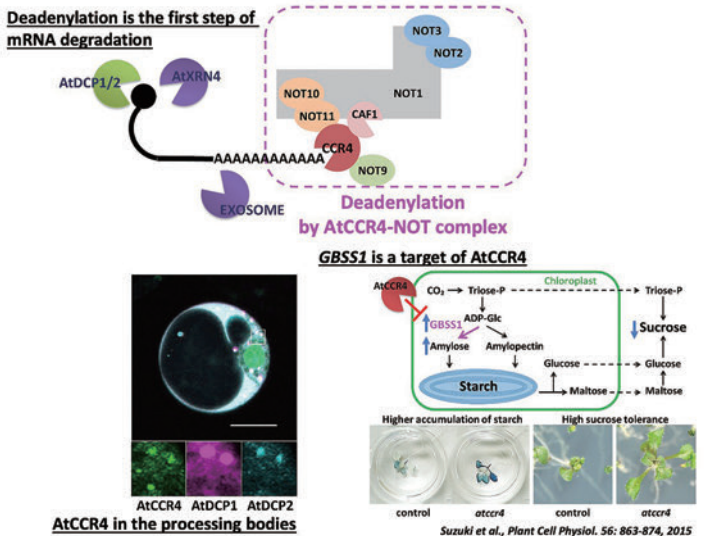


## Study abstract

Research in gene expression control has been conducted using various species. Initially studies in the field are on the aspects of transcriptional control but in recent decades, focus has now expanded to post-transcriptional control such as discovery of functional RNA molecules which include ribozymes, riboswitches, and small RNAs. In addition, researches on gene expression control has now changed from analyzing individual control step to clarify how the control of each step is coordinated. Due to their sessile lifestyle, plants must respond quickly when being challenged by various environmental stresses in order to survive in unfavorable environments. We want to clarify how gene expression control, particularly post-transcriptional control, is related to the environmental responses in plants, and how multiple control steps are coordinated at the molecular level.



Associate Professor  
**Yukako Chiba**  
<https://researchmap.jp/ykiki?lang=en>



## Keywords

stress response, regulation of gene expression, mRNA degradation, translational regulation, AtCCR4-NOT complex, Arabidopsis, molecular biology



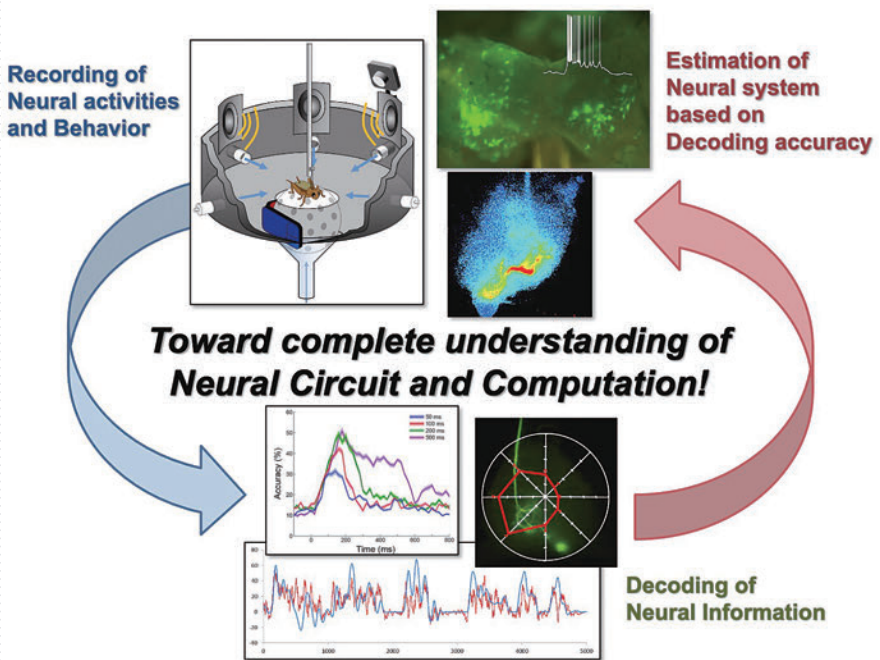
Professor

**Hiroto Ogawa**

<https://researchmap.jp/hogawa?lang=en>

## Study abstract

When animals receive sensory stimuli from environment, they perform appropriate behaviors via sensory perception and motor planning that is mediated by their central nervous system. By using a combination of behavioral analyses, electrophysiology, optical imaging and mathematical approaches, we study the neural basis underlying wind-elicited behavior in the cricket model system. The ultimate goal of our research is to generate a complete understanding of whole neural circuits and information processing from sensory inputs to motor output in specific behaviors.



### Keywords

insects, brain, nervous system, neuron, neurophysiology, imaging



## Study abstract

We study the functional organizations of insect “microbrains” to clarify common principles and diversities of brain mechanisms among insects and mammals. By studying their molecular, neural, and systems mechanisms, our research has demonstrated that crickets and cockroaches possess excellent learning capabilities.



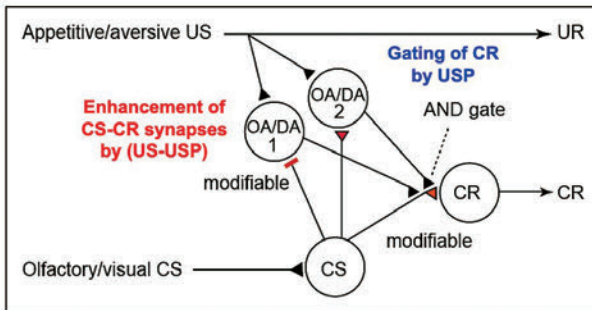
Professor

**Makoto Mizunami**

<https://researchmap.jp/mizunami?lang=en>

## Our research topic

**We are investigating the roles of the octopaminergic (OA) neurons and dopaminergic (DA) neurons in Pavlovian conditioning of crickets, as a model to clarify general principles, diversity and evolution of associative learning systems in animals.**



**A neural circuit model of Pavlovian conditioning, assuming the circuits of the mushroom body of the brain. Two types of OA/DA neurons are assumed: Type 1 conveys reward/punishment prediction error signals for conditioning and Type 2 conveys prediction signals (USP) for execution of conditioned responses. This arrangement is comparable to that of midbrain DA systems in mammals.**

See Mizunami *et al.*, *Proc. R. Soc. B.* 286: 20182132 (2019) and related papers.

### Keywords

brain, learning, olfaction, crickets, cockroaches, fruit flies, *Drosophila*





Associate Professor

**Kazuhiro Wada**

<https://researchmap.jp/kazuhirowada?lang=en>



Assistant Professor

**Nina Patzke**

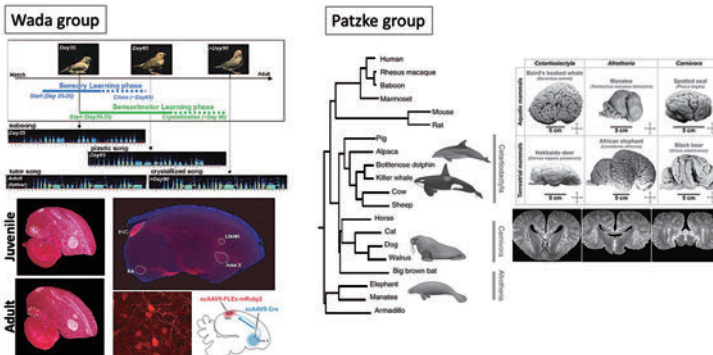
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## Study abstract

**(Wada group)** Animal behavior is influenced by both environmental and genetic factors. However, much remains to be learned regarding how and when the environmental and genetic factors act and how developing behavior itself affects the molecular basis in the neuronal substrate. The primary focus of our laboratory is to elucidate these questions by using songbirds as an animal model for vocal learning and to identify its critical period at molecular and genetic levels.

**(Patzke group)** The main research question of our laboratory is: How did the mammalian brain evolve? Explicitly we want to determine the strength of environmental influence on the evolution of the mammalian brain, by investigating aquatic mammals, (whale and pinnipeds), in comparison to the

closes land living relatives (even toed ungulates and carnivores). Especially we are interested in, if and how an aquatic lifestyle leads to predictable changes in the morphology of the mammalian brain.



### Keywords

(Wada group) animal behavior, gene expression, learning and memory, individual difference, songbird, communication, epigenetics

(Patzke group) Brain, evolution, comparative neuroanatomy, marine mammals, whales, seals, MRI, immunohistochemistry.



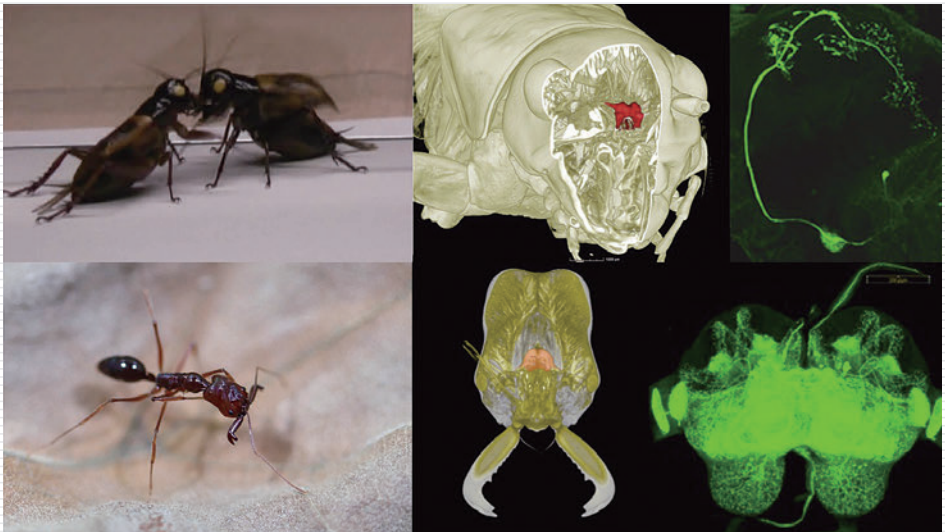
Associate Professor

**Hitoshi Aonuma**

<https://researchmap.jp/read0073962?lang=en>

## Study abstract

The aim of our research is to elucidate the neuronal mechanism underlying real-time adaptability in animal behavior. To gain a better understanding of the mechanisms, we have focused on aggressive behavior and locomotion behavior in invertebrate animals in particular insects. Aggression and locomotion are common behaviors in virtual animals and can be the experimental models to investigate the neuronal mechanisms underlying adaptive behaviors. Since insects possess rather simple and identical nervous systems, they provide us with an ideal model system to effectively investigate the neuronal mechanisms of adaptive behavior.



### Keywords

neuroethology, mobiligence, neurogenetics, modelling, simulation, robotics



Associate Professor

**Nobuaki Tanaka**

<https://researchmap.jp/nktanaka?lang=en>



Assistant Professor

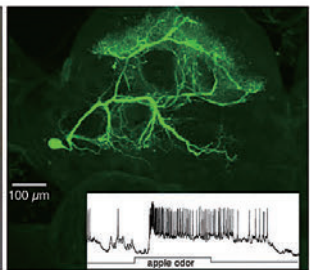
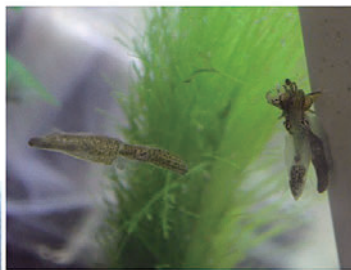
**Hiroshi Nishino**

<https://researchmap.jp/read0118403>

## Study abstract

**(Tanaka group)** Our goal is to reveal how neuronal circuits work as a system to process sensory inputs, and how this processing is modulated by a specific environment or by the mental state or the condition of the body. The answers to these questions would reveal how an animal displays adaptive behavior in response to a given situation that changes every moment, or even develops intelligent behavior to cope with a difficult situation. To study these problems in our laboratory, we are utilizing two invertebrate animals, the fly and the cephalopod.

**(Nishino group)** The aim of our research is to elucidate neuronal mechanisms underlying sensory processing of five senses in pest insects with the use of fine neuroanatomy and physiologies. We also promote implementation of species-specific sensory processing to environment-friendly pest control. The primary model organisms are cockroaches in the genus *Periplaneta*, though various insects such as termites, crickets, tree weta, beetles, stink bugs, cicadas, honey bees, moths, ants have been used.



### Keywords

(Tanaka group) *Drosophila melanogaster*, cephalopod, pygmy squid, sensory processing, neurophysiology, neuroanatomy, genetics, behavioral studies

(Nishino group) pest insects, IPM, biomimetics, pheromone and odor processing, neurophysiology (intracellular and extracellular recording), neuroanatomy (vital neuronal staining), behavioral analysis, TEM



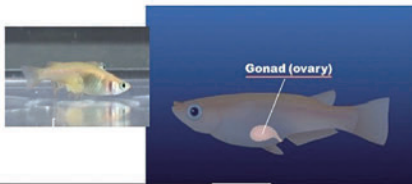
Associate Professor

**Katsueki Ogiwara**

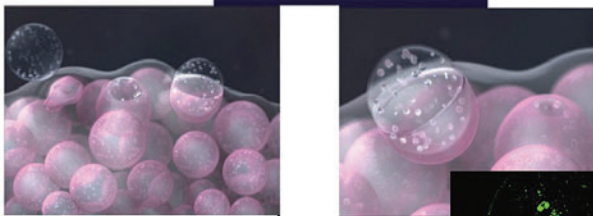
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## Study abstract

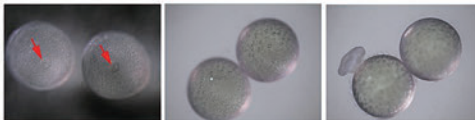
Our laboratory is primarily interested in understanding the functional roles of vertebrate reproductive organs, especially ovary at molecular levels. Our research particularly focuses on the following themes by using mice and medaka fish: (1) Identification of ovulatory enzymes in mammals. (2) Studies on the mechanism of tissue repair after medaka ovulation. (3) Does follicle cells communicate with oocytes during ovulatory period? (4) Studies on the regulatory mechanism in medaka ovulation. (5) Study on the molecular mechanisms of mouse follicle selection.



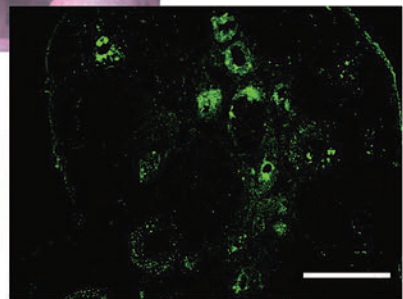
## Medaka ovulation



## Medaka ovarian follicle



## Mouse ovary (Tunel assay)



## Keywords

follicle selection, ovulation, tissue repair





## Study abstract

Steroid hormones regulate physiological responses in vertebrates by binding to the nuclear receptors (NR), a ligand-activated transcription factor. We study the evolution of vertebrate NRs, especially steroid hormone receptors and investigate how steroid hormones act in many vertebrates.



Professor

**Yoshinao Katsu**

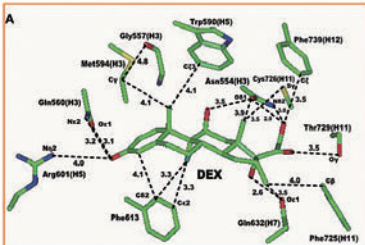
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Lungfish



Elephant shark



3D structure of human glucocorticoid receptor



Polypterus

### Keywords

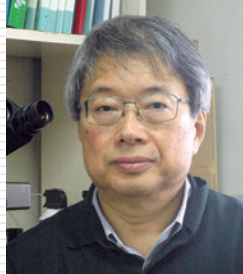
endocrinology, steroid hormone, nuclear receptor, endocrine disruptor



Professor

**Asato Kuroiwa**

<https://researchmap.jp/read0067267/?lang=en>



Assistant Professor

**Ikuya Yoshida**

<https://researchmap.jp/ikkXina>



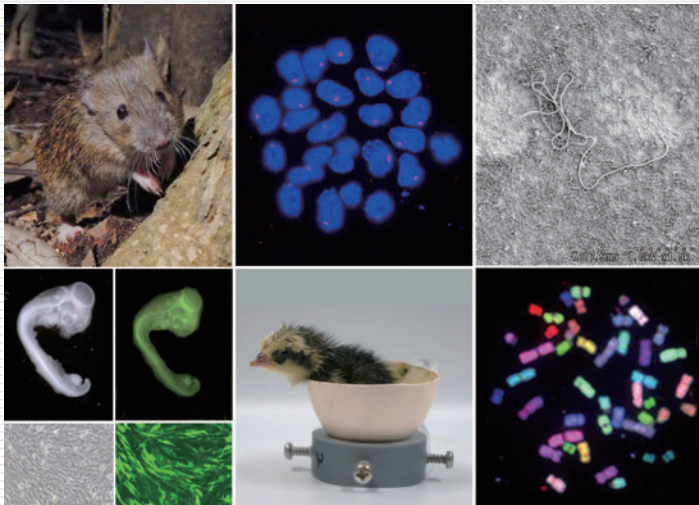
Assistant Professor

**Shusei Mizushima**

<https://researchmap.jp/read0141228>

### Study abstract

We are interested in the studies of sex determination, regulation of chromatin, fertilization in both birds and mammals. We perform functional analysis of various genes of domestic birds such as chicken, quail and emu by using transgenic, genome editing or biotechnological methods. We also



aim to identify novel sex determination genes in order to reveal the process of Y-loss in the Tokudaia genus which lacks Y chromosomes.

### Keywords

sex determination, heterochromatin, EC cell, gene, Y chromosome, bird, mammal, reproductive developmental biology, molecular biology



## Study abstract

The function of genome sequences is not fully understood even though the genome sequences have been decoded in many species. We focus on the function of mammalian genome sequences in spermatogenesis/oogenesis and investigate multifunctional genome elements and long noncoding RNAs in mouse/human testis and ovary. Our goal is to elucidate the physiological significance and molecular mechanism of genome sequences in reproduction by looking at the functions of genes and noncoding RNAs in the mammalian ovary, testis, and placenta. We also focus on elucidating the molecular mechanism in spermatogenesis and placental differentiation.

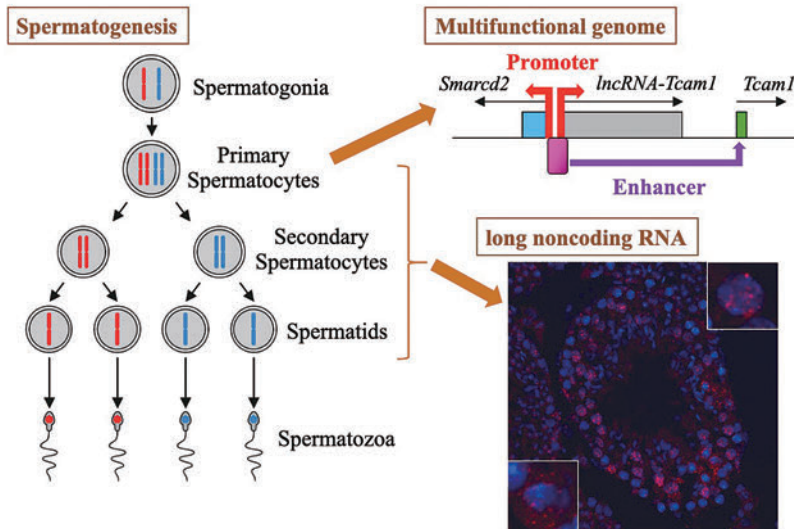


Associate Professor

**Atsushi P. Kimura**

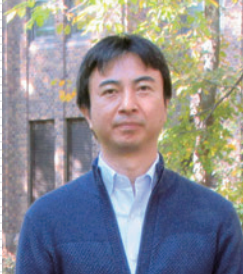
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## Multifunctional genome and long noncoding RNAs in mammalian spermatogenesis



## Keywords

molecular biology, reproductive biology, gene regulation, transcription, epigenetics, long noncoding RNA, multifunctional genome, dual promoter-enhancer, spermatogenesis, ovary, placenta, protease



Associate Professor

**Tomoya Kotani**

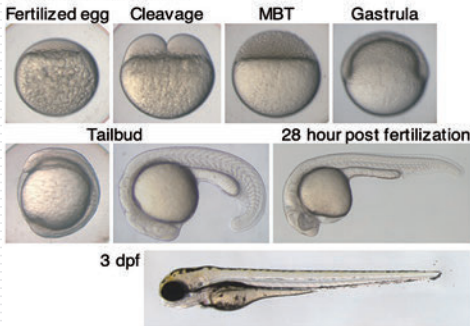
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## Study abstract

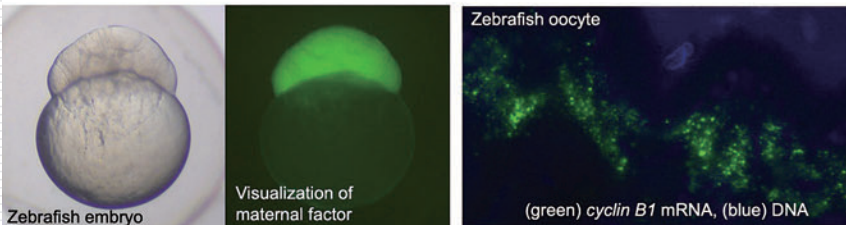
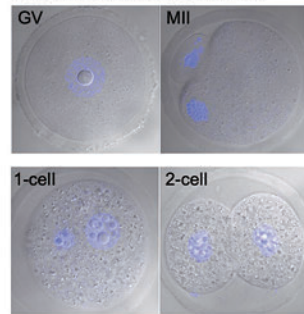
The fate of a multicellular organism begins with a single cell fertilized egg that subsequently undergoes differentiation and morphogenesis to become an embryo. All cellular functions and patterning decisions that occur prior to the activation of the zygotic genome depend on maternal factors deposited in the egg during oogenesis, which become active after fertilization. By using zebrafish and mouse as model systems, we investigate the deposition of maternal factors in oocytes that promote developmental processes. Our aim is to identify novel mechanisms of oogenesis and developmental processes by isolating and analyzing maternal factors.

## Laboratory of Reproductive and Developmental Biology - (Kotani Lab)

### Zebrafish development



### Mouse oocyte and development



### Keywords

vertebrate, oocyte, egg, early development, maternal factor, cell biology, molecular biology, molecular genetic



## Study abstract

Completion of the genome sequence project and development of next-generation sequencing technique have dramatically changed the design of research strategy in biomedical science. However, functions of all genes in the whole genome are still not well understood even by now. We are elucidating the functions of disease-related genes by using gene-manipulated rats and mice generated in our laboratory.



Associate Professor

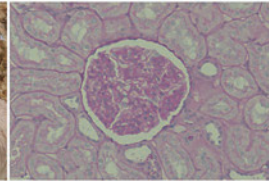
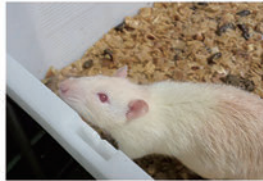
**Kazuhiro Kitada**

<https://researchmap.jp/read0200146?lang=en>

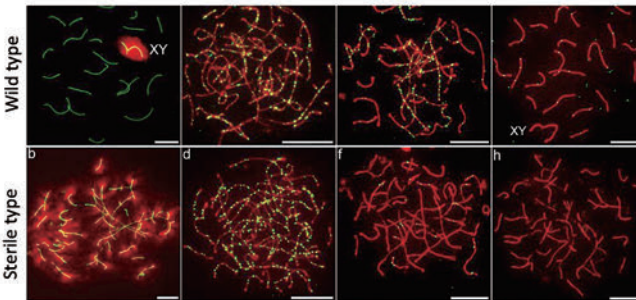
## Kitada Lab



Generation of genetically modified mice by microinjection.



A spontaneous diabetic rat (left) and its glomerulus of kidney that developed nephropathy (right).



Chromosome pairing in spermatocytes of wild rats (upper) and sterile mutant rats (lower) during meiosis.

## Keywords

animal models for human diseases, gene manipulation, rat, mouse

# TUITION FEES

	Undergraduate Students	Postgraduate Students	Research Students	Auditing Students
Tuition Fee	¥535,800 ( per year )	¥535,800 ( per year )	¥29,700 ( per month )	¥14,800 ( 1 credit )
Entrance Fee	¥282,000	¥282,000	¥84,600	¥28,200
Examination Fee	¥17,000	¥30,000	¥9,800	¥9,800

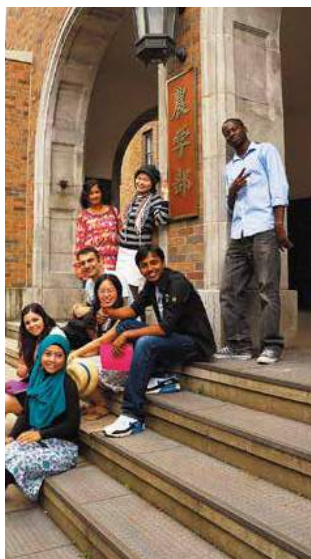
- ① At Hokkaido University, tuition is paid in two installments : May and November.
- ② Should tuition fees be revised during a student's period of enrollment, the new amount will become effective from that point on.
- ③ Students who fail to pay tuition fees for one term will not be allowed to continue.
- ④ Students enrolled in regular (degree-seeking) undergraduate and graduate courses who experience financial difficulty while maintaining excellent academic records may apply to receive a 100%, 50% or 25% tuition fee reduction.
- ⑤ Tuition Fees must be paid in yen.

**Q**

**How easy is it to obtain a tuition fee waiver if I'm having financial difficulties?**

**A**

**In 2019, 97.4% of first semester applicants and 97.1% of second semester were successful in obtaining a tuition fee waiver of either 100%, 50% or 25%.**



# COST OF LIVING

## How much money will I need?

Sapporo provides an excellent quality of life and a cost of living more reasonable compared with other major cities in Japan. Your budget will depend on the lifestyle you choose to lead (eating in restaurants or cooking at home, living in private accommodation or in University dormitories). Generally with tuition costs included, you should budget for ¥1,500,000 per year (\$13,514 USD).

**Budget For**  
¥80,000~115,000  
per month

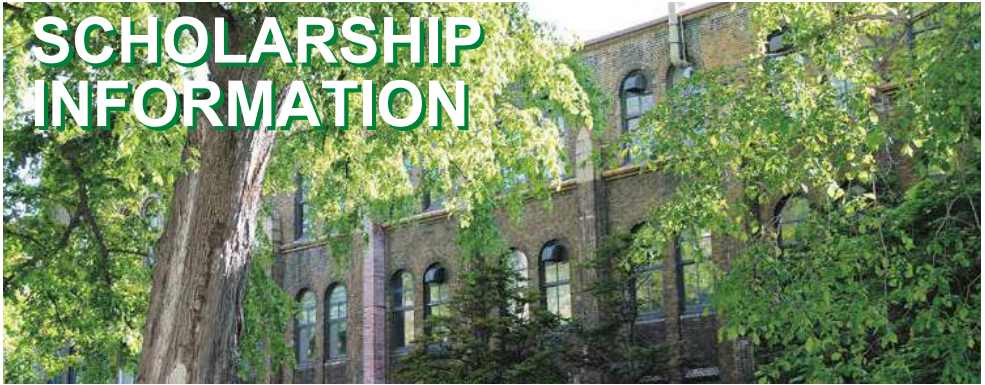
**Housing** ¥35,000~45,000

**Food** ¥20,000~35,000

**Books** ¥10,000~15,000

**Misc** ¥15,000~20,000

\*The above are estimated costs and should be used as a guide only.



## Japanese Government

### Japanese Government (Monbukagakusho) Scholarship

There are three methods to secure a "Monbukagakusho Scholarship":

- ① One method to apply for a scholarship is to receive a recommendation to MEXT from the Japanese Embassy or Consular Office in your country. To receive a recommendation, you need to pass a primary screening conducted by the local embassy with cooperation from your country's government. For more details, enquire at your local Japanese Embassy or Consular Office.
- ② Students coming to Hokkaido University can also apply through our University. Application is made through your prospective advisor. For details, visit our website.
- ③ Domestic Selection\* : This category targets self-supported students currently studying in Japan.

\*Japanese Government will not offer scholarships in this category in 2020.

## Hokkaido University (pre-enrollment application)

### Hokkaido University President's Fellowship

This scholarship is for prospective international students seeking master's or doctoral degrees and targeted toward those students who have excellent academic record as well as a strong interest in Hokkaido University and Japanese culture. Students must be current or alumni students of universities that have concluded Inter-University Exchange Agreements and a Memorandum of Understanding on Student Exchange with Hokkaido University.

### Special Grant Program for Self-Supported International Students

This program is for prospective international students seeking doctoral degrees or the international students selected for the "Program for Leading Graduate Schools". To obtain this special grant, applicants must have excellent academic records and be able to prove how their research can contribute internationally in their chosen field. International students selected for this program are hired as Research Assistants or receive a stipend and tuition fees are waived.

### Hokkaido University Frontier Fund Clark Scholarship

This scholarship is financed by donation, and for self-supported international students seeking doctoral degrees who have excellent academic record and need financial assistance. Please refer to the English website (<https://www.global.hokudai.ac.jp>) for more detailed information.

## Private

Although highly competitive, there are a variety of scholarships that students can apply for after arriving in Japan. Please refer to the English website (<https://www.global.hokudai.ac.jp>)

## Others

### JASSO (Japan Student Service Organization)

This scholarship is open to undergraduate students (¥48,000 monthly) taking the Examination for Japanese University Admission for International Students (EJU) or graduate students (¥48,000 monthly) who intend to enrol in a school that offers pre-arrival admission.

For a full list of private scholarship available, please visit: [https://www.jasso.go.jp/ryugaku/study\\_j/scholarships/shoureihi/yoyakuseido/](https://www.jasso.go.jp/ryugaku/study_j/scholarships/shoureihi/yoyakuseido/)

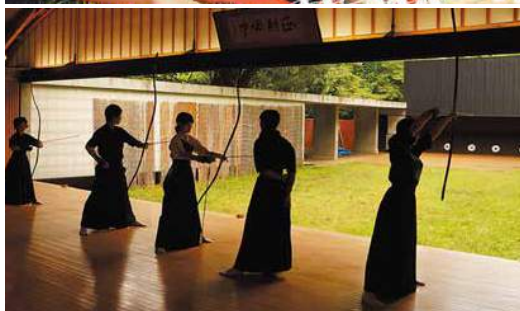
### JICA

There are a variety JICA projects that students can apply. Please refer to the Website of JICA (<https://www.jica.go.jp/>)

# STUDENT LIFE

At Hokkaido University, there is more to student life than just lectures and tutorials. An abundance of opportunities await international students to become part of the many activities available on campus. There are approximately 50 cultural clubs and approximately 60 athletic clubs at Hokkaido University. If you wish to know Japan and get better acquainted with Japanese students, participation in club activities will prove to be extremely rewarding. The Student Support Division offers many kinds of cross-cultural events and cultural exchange opportunities which are open to international students, international researchers, their families, Japanese students, and University staff. Come by the Student Communication Station to find upcoming events on the message board or in the HU International Student Newsletter.

- art ● jazz ● judo ● rugby ● skate ● dance ● chorus ● boating ● jogging ● archery ● curling ● boxing ● rakugo ● cycling ● yachting ● handball
- canoeing ● volleyball ● basketball ● swimming ● gymnastics ● field hockey ● orienteering ● cheerleading ● film making ● photography
- horseback riding ● mountaineering ● ski and snowboard



# CLIMATE IN SAPPORO CITY

\*average daily temperatures

**April**  
(7°C/45°F)

**May**  
(12°C/54°F)

**June**  
(17°C/63°F)

**July**  
(21°C/70°F)

**August**  
(22°C/72°F)

**September**  
(18°C/65°F)



**SPRING** Pleasant temperatures with an abundance of colors



**SUMMER** Warm days full of sunshine with temperate mornings and evenings



# ABOUT HOKKAIDO

Hokkaido is the northernmost region of Japan, consisting of one large island and 509 surrounding islands. Dotting the center of the main island are mountain ranges and impressive volcanoes surrounded by sweeping coastal plains. The islands' total land mass is 83,000km<sup>2</sup> which makes up 22% of the total land mass of Japan. Sapporo is known for its amazing food, unique history, natural beauty, and cosmopolitan character. With its fashionable restaurants, cafe culture, and relaxed atmosphere, it's often rated as one of the most desirable places to live in Japan. Sapporo offers a high quality lifestyle with its perfect blend of bustling city life and the natural peace of the great outdoors.



**October**  
(12°C/54°F)

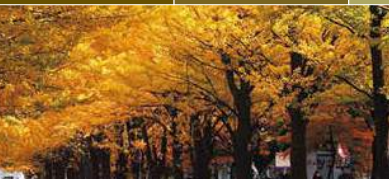
**November**  
(5°C/41°F)

**December**  
(-1°C/30°F)

**January**  
(-4°C/25°F)

**February**  
(-3°C/27°F)

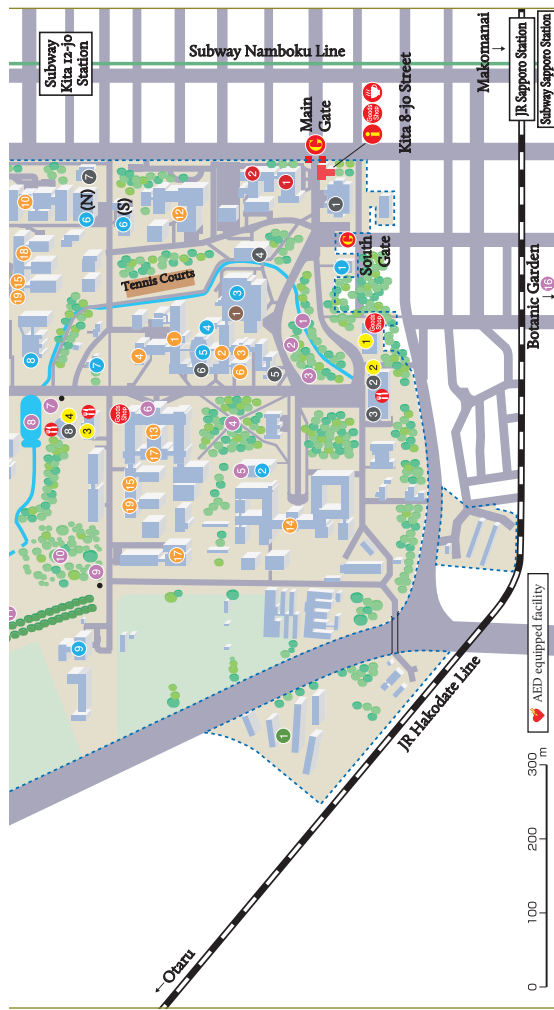
**March**  
(1°C/34°F)



**AUTUMN** All the beautiful colors of Autumn

**WINTER** Refreshing and invigorating days with sun and powdery snow





**University Organization**

- 1 Administration Bureau
- 2 Front Office for Human Resource Education and Development
- 3 Hokkaido University Hospital
- 4 Dental Clinical Division of Hokkaido University Hospital
- 5 International Student Center
- 6 Office of International Affairs
- 7 Admission Center
- 8 Institute for the Advancement of Higher Education

**Graduate Schools, Faculties and Schools**

- 1 Graduate School of Letters
- 2 Graduate School of Law
- 3 Graduate School of Economics and Business Administration
- 4 Graduate School of Education
- 5 Graduate School of International Media, Communication and Tourism Studies
- 6 Graduate School of Public Policy
- 7 Graduate School of Medicine
- 8 Graduate School of Dental Medicine
- 9 Graduate School of Veterinary Medicine
- 10 Graduate School of Health Sciences
- 11 Graduate School of Information Science and Technology

- 12 Graduate School of Environmental Science
  - 13 Graduate School of Science
  - 14 Graduate School of Agriculture
  - 15 Graduate School of Life Science
  - 16 Graduate School of Engineering
  - 17 Graduate School of Chemical Sciences and Engineering
  - 18 Faculty of Pharmaceutical Science
  - 19 Faculty of Advanced Life Science
- \*The Graduate School of Fisheries Sciences is located on the Hakodate Campus

**Research Institutes & Centers**

- 1 Center for Ainu & Indigenous Studies
- 2 Center for Sustainability Science
- 3 Hokkaido University Archives
- 4 Slavic-Eurasian Research Center
- 5 Center for Experimental Research in Social Sciences
- 6 Information Initiative Center North / South Bldgs.
- 7 Archaeological Research Center
- 8 Center for Environmental and Health Sciences
- 9 Field Science Center for Northern Biosphere
- 10 Research Center for Integrated Quantum Electronics
- 11 Proton Beam Therapy Center

- 1 Hokkaido University International House Kita 8 (Kita 8 Nishi 11)
- 2 Keiteki-Ryo Student Dormitory (Kita 18 Nishi 13)
- 3 Hokkaido University International House Kita 23 (Kita 23 Nishi 13)
- 4 Foreign Scholars' Accommodation (Kita 24 Nishi 12)

**Tourist Spots**

- 1 Sakushukokonno River
- 2 Central Lawn
- 3 Bust of Dr. William S. Clark
- 4 Elm Grove
- 5 Former School of Agriculture Library
- 6 The Hokkaido University Museum (Closed until July 2016)
- 7 Monument to First Artificial Snow Crystal
- 8 Ono Pond
- 9 Monument in Honor of Dr. Inazo Nitobe
- 10 Flowering Tree Garden
- 11 Poplar Avenue
- 12 Gingko Avenue
- 13 Heisei Poplar Avenue
- 14 Site of Old Village
- 15 Model Barn
- 16 Botanic Garden

**Cafeterias / Restaurants / Stores**

- 1 Information Center & Bin Forest Shop
- 1 Hokkaido University Co-op
- 2 Clark Cafeteria
- 3 Chuo Cafeteria, HU Co-op
- 4 Bin Restaurant
- 5 Restaurant Royal
- 6 Hokubu Cafeteria, HU Co-op
- 7 Restaurant Popular



**Getting to Sapporo Campus**

