2025 Academic Years

Graduate School of Integrated Sciences for Life

Hiroshima University

Application Guidelines
General Selection

Doctoral Course

(April 2025 Admissions)

November 2024

Hiroshima University

Admissions Policy <Doctoral Course>

Type of Students We Seek

[Program of Biotechnology]

[Program of Bioresource Science]

[Program of Life and Environmental Sciences]

[Program of Basic Biology]

[Program of Mathematical and Life Sciences]

CONTENTS

[List of Academic Supervisors]

The Graduate School of Integrated Sciences for Life, Hiroshima University, is recruiting students for the Doctoral Course in the Department of Integrated Science for Life to be enrolled in April 2025.

1. Number of Students to Be Recruited and Venue for Examinations, etc.

2. Applicant Eligibility

3. Application Procedures

(1) Application methods

<Online application>

Note:

The application procedure wouldn't be completed without either sending or delivering in person all the necessary application documents by the due date.

(2) Application period

From January 6, 2025 to January 10 , 2025 (No later than 17:00 (JST))

(3) Online application

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<How to apply > **Complete the following eight steps within the application period stated below:**

Step 1: Access the online application system

Step 2: Select 'Membership Registration' on the UCARO log in screen.

Step 3: (If you have, otherwise, skip 3) Enter the Account

Step 4: Input your application data into the Internet application system

Step 5: Confirm the necessary documents and uploaded your photo

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Step 6: Payment of entrance examination fee (JPY 30,000)

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***In addition to the entrance examination fee, applicants must cover the remittance fees.**

Important notices regarding the entrance examination fee

Step 7: Initial registration process complete (Your application is NOT completed yet.)

Step 8: Submission of application documents

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(4) Documents to be submitted (Specified forms can be downloaded from the Home Page.)

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B		中国高等教育学 学士（ 士）学位 ・ 教育部学 子注册 案表 ・ 教育部学籍在 告 元
C		(Use the official form.)

D

4. Examination Date and Time

One day between January 14 and February 4, 2025*		

*** Examination date, time, and venue will be notified individually later.**

5. Screening Methods

6. Announcement of Successful Applicants

12:00 (expected), February 21 (Fri.), 2025

7. Enrollment Fee and Tuition Fee

8. Payment of Examination Fee and Enrollment Fee

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9. Hiroshima University Excellent Student Scholarships

10. Personal Information

11. Examination Information Disclosure

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12. Frontier Development Program for Genome Editing

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（社会人特別入試短期修了コース）

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13. Additional Notices

(1) Prior to application, please consult about the research programs with a faculty member under whom applicant wishes to study.

14. Other Points of Attention

大学院統合生命科学研究科主指導教員一覧表

生物工学プログラム　(1/4)

Academic Staff		Research Fields	Keywords
Professor	Tsunehiro AKI	Genomic breeding of oleaginous microorganisms for provision of new health foods, pharmaceuticals, chemicals and sustainable bioenergy.	Lipid engineering, Microbial biotechnology, Biorefinery
Professor	Kenji ARAKAWA	We aim to characterize the mechanism for the biosynthesis of bioactive compounds and their regulatory system in Streptomyces species. Isolation of new metabolites and characterization of biosynthetic enzymes are also studied in our laboratory.	Bioactive compounds Biosynthesis Secondary metabolism
Professor	Yoshiko OKAMURA	Marine Biotechnology: Development of new technologies using marine bacterial metagenome to produce useful materials. Biomineralization: Recovery of heavy and minor metals and rare earth elements, and nanoparticle formation.	Marine iotechnology, Biomineralization, Biofuel production
Professor	Seiji KAWAMOTO	We are interested in the molecular mechanisms underlying the pathogenesis of allergic disorders. We are also searching for anti-inflammatory foodstuffs, which are useful to prevent atopic and proinflammatory disorders. Another ongoing project is to elucidate mechanisms involved in the establishment of immune tolerance, and its application to the development of novel immunosuppressants and anti-inflammatory drugs.	Allergy/Immunology,Animal cell technology,Functional foods
Professor	Akio KURODA	Creation of new proteins/peptides by evolutionary molecular engineering. For example, we created an asbestos-binding protein in order to analyze asbestos. We also created a membrane-binding peptide in order to isolate extracellular membrane vesicle (exosome, microvesicle) that have great potential as diagnostic tools and biomarkers for many kinds of diseases such as cancers.	Protein engineering, Evolution engineering, Biosensing
Professor	Yutaka NAKASHIMADA	The subject of research in a field of energy metabolic engineering for production of bio-fuels such as methane, hydrogen and alcohols, and bio-materials from renewable feedstocks such as biomass based on fermentation technology and genetic engineering of microorganisms.	Fermentation technology, Biochemical engineering, Metabolic engineering

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大学院統合生命科学研究科主指導教員一覧表

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生物工学プログラム (2/4)

			Research Fields	Keywords
Professor	Ryuichi HIROTA	Studies on the phosphorus cycling in the environment and the phosphorus metabolism of bacteria. We analyze the molecular mechanisms of the phosphorus metabolic system		

大学院統合生命科学研究科主指導教員一覧表

生物工学プログラム (3/4)

Academic Staff		Research Fields	Keywords
Associate Professor	Takeshi IKEDA	Si Our research focuses on the interaction between inorganic silicon (Si) materials and bacteria (and their biomolecules). We are developing biointegrated devices/materials using Si-associated biomolecules as an interface. We also investigate the contribution of Si-utilizing bacteria to the global Si cycle.	Biomineralization Biointegrated devices/materials Silicon cycle
Associate Professor	Masaru UENO	DNA Study on molecular mechanisms of telomere maintenance and DNA repair and their applications for development of anti-cancer and anti-ageing agents.	Telomere, Cancer, Aging
Associate Professor	Setsu KATO	1 We analyze how microbial cells adapt and survive under various conditions using the single cell quantitative method. We are also interested in the process of cell death to identify the weakness of cellular homeostasis. These analyses will help us to find the principles of life and to create useful host cells for bioprocess.	1 Cellular homeostasis, Life and death, Single cell analysis
Associate Professor	Kenji KITAMURA	( ) ( ) Studies on modulation of cellular physiology in yeast by nutrients via regulation of peptide transporters. Searching for their non-peptide substrates, and exploration of novel bioactivities of dipeptides. Development of high-functioning yeast strains.	Yeast, Transporter, Amino acid/dipeptide
Associate Professor	Kazunori KUME	We would like to understand mechanisms of global cellular systems which are fundamental to cellular growth, development and reproduction of eukaryotic cells. Especially we are interested in cell polarity and organelle size and shape. For this research, we use the genetically amenable model organism, yeasts.	Cell sturucture, Organelle, Cell polarity
Associate Professor	Takahisa TAJIMA	Development of biocatalysts for efficient bioconversion processes using psychrophilic bacteria and mesophilic conversion enzymes. Construction of anaerobic microbial consortia tolerant to high concentrations of ammonia and salts and analysis of their tolerance mechanism.	Bioproduction, biocatalysis, Bacterial consortium, Anaerobic digestion

大学院統合生命科学研究科主指導教員一覧表

生物工学プログラム　　(4/4)

Academic Staff		Research Fields	Keywords
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Associate Professor	Miyako NAKANO	Glycosylation, which is one of the posttranslational modifications of proteins, is involved in infection by pathogens such as bacteria and viruses, cancer and acquisition of drug-resistance. We investigate these biological mechanisms with detailed analysis of glycan structures by mass spectrometry.	Glycan, Mass spectromery, Biomarker
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Associate Professor	Makoto FUJIE	We focus on the interaction between microorganisms and higher plants. We also study biomass production using photosynthetic microorganism by molecular biological methods, such as genome editing.	Plant-microbe interaction, Biomass production, Genome editing
Associate Professor	Hisakage FUNABASHI	Our research focuses on using biomolecules and living cells as functional materials. We are developing novel functional molecules such as biosensing molecules with proteins and nucleic acids. We are also exploring new methods to create, evaluate, and manipulate functional living cells.	Biofunctional materials, Biodevices, Biosensing

大学院統合生命科学研究科主指導教員一覧表

食品生命科学プログラム　（1/2）

Academic Staff		Research Fields	Keywords
Professor	Satoru UENO	Characterization of Physical properties and Clarification of kinetics for edible lipids.	, , Lipid, Crystallization, Polymorphic transfoemation
Professor	Kiyoshi KAWAI	Food processing, preservation, and texture analysis.	Food processing, Preservation, Texture analysis
Professor	Masayuki SHIMADA	The study for understanding molecular and endocrine mechanisms of reproductive functions and developing novel reproductive technologies.	Reproductive biology, Molecular endocrinology, Reproductive technology
Professor	Tadashi SHIMAMOTO	Analysis of pathogenicity-related genes and drug resistance genes of foodborne pathogenic bacteria and development of norovirus inactivation method.	Foodborne pathogenic bacteria, Drug-resistant bacteria, Norovirus
Professor	Takuya SUZUKI	Physiological functions of nutrients and food factors.	Functional foods, Nutrition, Human health
Professor	Susumu NAKAE	Studies of pathogenesis of allergic and autoimmune disorders.	chronic inflammation, cytokines, mouse models for human diseases
Professor	Tatsuya NAKAYAMA	Studies on the pathogenicity of foodborne bacteria and the spread and prevention of antibiotic-resistant bacteria.	Foodbrone bacteria, Pathogenicity, Antibiotic-resistant bacteria
Professor	Masahide NISHIBORI	Studies on Mammalian and Avian Molecular Evolution, Phylogenetics and Geography using Their Information of Animal Genome, and Their Application to Agricultural Sciences.	, , Animal genetics, Molecular evolution, Molecular phylogenetic study
Professor	Shinichi NISHIMURA	Chemical biology using bioactive natural products	natural products chemistry, bioactive metabolites, chemical biology
Professor	Yoshio HAGURA	Analysis of mechanical and electrical properties of the food, and development of food processing and measurement techniques using those properties.	, , Mechanical properties, Electrical properties, Food processing
Professor	Kouichi FUNATO	Molecular genetic studies of lipid dynamics and functions.	, , Lipid, Yeast, Molecular genetics
Professor	Kenji HOSONO	Socio-economic Agricultural Study about Sustainable Food Resource and Supply Chain.	Food production management, Food market, Sustainable development
Professor	Hiroyuki HORIUCHI	Basic and applied study using avian stem cells and genome editing technology in the agriculture field.	Avian, Stem cells, Genome editing

大学院統合生命科学研究科主指導教員一覧表

食品生命科学プログラム (2/2)

		Research Fields	Keywords
Professor	Noriyuki YANAKA	Molecular mechanisms of lifestyle-related diseases and nutritional science.	Lifestyle-related diseases, Food factor, Molecular nutrition
Visiting Professor	Masaki OKUDA	Research for production and utilization of high quality rice for sake making.	Alcoholic beverage, Sake rice, Properties of rice used for sake
Visiting Professor	MASAKI	Development of microorganisms for the brewing, and enzymatic research for its aplications.	Enzyme, Brewing, Microorganism
Associate Professor	Hisashi OMURA	Studies on chemical interactions between plants and insects.	Chemical ecology, Semiochemical, Pheromone
Associate Professor	Yasushi OKINAKA	Studies on the interactions between aquatic organisms and their pathogens.	Pathogen, Fish, Infection mechanism

Hisashi OMURAS E S neathogeqto B i i rr intng inr ض P
Professor
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大学院統合生命科学研究科主指導教員一覧表

生物資源科学プログラム　（1/2）

		Research Fields	Keywords
Professor	Naoki ISOBE	Immunology and endocrinology in mammary gland of ruminants.	Mastitis, Antimicrobial peptide, Innate immunity
Professor	Akihiro UEDA	Improvement of environmental stress tolerance in higher plants and development of utilization technologies of plant growth promoting microbes.	Plant nutrition, Environmental stress, Plang growth promoting microbes
Professor	Tetsuya UMINO	Stock enhancement and conservation resources of aquatic animal.	Aquaculture, Stock enhancemnet, Aquatic animal
Professor	Taketo OBITSU	Nutrition and feed utilization in ruminants.	Digestion, Protein metabolism, Energy metabolism
Professor	Kazuhiko KOIKE	Coastal biological processes of Seto-Inland Sea, coral reefs and mangrove swamps based on primary producers (various microalgae).	Microalgae, Phytoplankton, Photosynthesis
Professor	Yoichi SAKAI	Behavioral ecology of fish reproduction.	Social structure, Mating tactics, Field survey
Professor	Masayuki SHIMADA	The study for understanding molecular and endocrine mechanisms of reproductive functions and developing novel reproductive technologies.	Reproductive biology, Molecular endocrinology, Reproductive technology
Professor	Toshihisa SUGINO	Effects of Feeding management on dairy cattle health and performance.	Dairy cattle, Nutrition and feeding, Metabolism
Professor	Rumi TOMINAGA	Studies on cell differentiation and development in plants.	Epidermal cell, Root hair, Transcription factor
Professor	Takeshi TOMIYAMA	Fish life history and stock dynamics.	Fisheries ecology, Early life history, Estuaries and coastal
Professor	Takahiro YONEZAWA	Evolutionary genomics on the domestic and wild animals	phylogeny, demogp

大学院統合生命科学研究科主指導教員一覧表

生物資源科学プログラム　　(2/2)

Academic Staff		Research Fields	Keywords
Associate Professor	Takashi UMEHARA	The study for developing novel reproductive technology via understanding reproductive mechanism focusing on metabolism, immunology and endocrinology.	, Reproductive Biology, Reproductive technology, Germ cells
Associate Professor	Aki KATO	Aquaculture and conservation of algal resources.	Coralline algae, Edible seaweeds, Climate change
Associate Professor	Shin-ichi KAWAKAMI	Research of the brain mechanisms of feeding, drinking, and aggressive behavior in avians.	Animal behavior, Hypothalamus, Chicken
Associate Professor	Yuzo KUROKAWA	Research on healthy life cycle of dairy cows.	Dairy cow, Life cycle, Antioxidant capacity, Milk production
Associate Professor	Hidetoshi SAITOU	Researches on population ecology of macrobenthos in freshwater and shallow seawater zones.	Ecology, Benthos, Alien species
Associate Professor	Naoki SUZUKI	Control of intramammary infection in dairy animals.	, , mastitis, infection control, foodborne zoonoses
Associate Professor	Toshinori NAGAOKA	Studies on soil functions in plant production.	, , Soil, Nutrient dynamics, Organic matter
Associate Professor	Yoshiaki NAKAMURA	Preservation of mammalian and avian genetic resources on the basis of germ cell manipulation.	, , Germ cells, Cryopreservation, Genetic modification
Associate Professor	Takahiro NII	Enhancement of immune function and productivity to focused on intestinal environment in chickens.	, , Chicken, iIntestinal environment, Egg production
Associate Professor	Toshiya HASHIMOTO	Understanding of the marine environment using the filed observation and numerical simulation model.	Marine environment, Data analysis, Ecosystem model
Associate Professor	Masayuki YOSHIDA	Biological basis of emotion, learning, and mind in animals.	Animal psychology, Emotion, Neuroscience
Associate Professor	Kaori WAKABAYASHI	Reproduction and growth of marine invertebrates.	Seed production, Larval development, Embryology

[redacted]学研究科主指導教員一覧表

[redacted]プログラム （1/2）

		Research Fields	Keywords
	[redacted]HIDA	Biochemistry on enzymes and proteins which mediate protein phosphorylation and dephosphorylation.	Enzyme, Neuron
	[redacted]IHARA	Glial function in health and disease.	Neuropharma-toxicology, Glia, Model animals
	[redacted]KENA	Study on the physiological functions of neuronal substances regulating appetite and energy homeostasis.	Neuroendocrinology, Neuropeptide, Appetite
	[redacted]A	Plant and microbe symbioses in soil ecosystem.	Mycorrhiza, Soil-borne disease, Cellular-ecological functions
Professor	Akiko SATOH	The mechanism of the polarized vesicle trafficking in neurons.	Golgi units, Photoreceptors, Drosophila melanogaster
Professor	Kazuhiko TAKEDA	Environmental dynamics and analysis of trace compounds and reactive oxygen species in the atmosphere and hydrosphere.	Environmental Analytical Chemistry, Reactive Oxygen Species, Trace Pollutants
Professor	Takayuki NAKATSUBO	Roles of plants, animals and microorganisms in terrestrial ecosystems.	Ecosystem ecology, Plant ecology,

大学院統合生命科学研究科主指導教員一覧表

生命環境総合科学プログラム　(2/2)

Academic Staff		Research Fields	Keywords
Associate Professor	Akio TSUCHIYA	Climate change caused by deforestation of rainforests in Amazonia.	Small climatology, Biometeorology, Dendro-climatology
Associate Professor	Miyabi NAKABAYASHI	Behavior and ecology of wildlife	Tropical rainforest, Ecology, Mammalogy
Associate Professor	Tatsuo NEHIRA	Research of structural organic chemistry in life science.	Analytical organic chemistry, Natural product chemistry, Circular dichroism
Associate Professor	Akira HIKOSAKA	Genomic, symbiotic and embryonic studies on metazoan evolution.	, , Evolutionary Zoology, Acoelomorpha, Metazoa
Associate Professor	Chiho WATANABE	*in vitro* Material science studies for life phenomena based on *in vitro* cell models	lipid membrane, polymer solution, soft matter science
Lecturer	Motomu TODA	Energy, water and carbon exchange between atmosphere and forest ecosystems.	Flux, Modelling, Climate change

大学院統合生命科学研究科主指導教員一覧表

基礎生物学プログラム (1/2)

		Research Fields	Keywords
Professor	Takuya IMAMURA	Understanding epigenomic mechanisms that underlie the development of primate brain.	, , RNA primate, brain, non-coding RNA
Professor	Hajime OGINO	Genomic and epigenetic regulation of development and regeneration (sensory organs and central nervous system) in vertebrates. Molecular mechanisms of genome evolution and environmental adaptation in amphibians.	Development, Regeneration, Evolution
Professor	Yutaka KIKUCHI	Studies on tumor microenvironment network. Analysis of Chromatin 3D Structure.	RNA Tumor microenvironment, Chromatin, long non-coding RNA
Professor	Makoto KUSABA	Molecular mechanism of leaf senescence, Molecular genetics in the genus Chrysanthemum, Genetic resources of chrysanthemum and cycad.	Molecular genetics, Leaf senescence, Chrysanthemum
Professor	Takahiro CHIHARA	(Molecular mechanism underlying neural network formation, maturation and maintenance. Genetic studies to reveal molecular mechanism for the interaction between environment (nutrition, odor and various stress etc.) and individual condition (longevity and behavior etc.).	Neural network, Olfaction, Longevity
Professor	Toshinori HAYASHI	Study of organ regeneration and development using urodele amphibian. Regulatory mechanism of cell proliferation in organ regeneration.	Iberian ribbed newt, Organ regeneration, Development
Professor	Yuki HIRAKAWA	Development and evolution of meristems in land plants. Cell signaling mediated by plant peptide hormones.	, , , Meristem, Stem cell dynamics, Plant peptide hormones, Marchantia
Associate Professor	Takeshi IGAWA	Genome evolution underlying speciation and environmental adaptation of amphibians.	Amphibians, Adaptive evolution, Genomics
Associate Professor	Tatsuya UEKI	Mechanism of metal ion accumulation and reduction by marine invertebrate animals and their physiological .	Physiology, Metal ion, Redox
Associate Professor	Misako OKUMURA	Mg n	, , ض ظه c

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大学院統合生命科学研究科主指導教員一覧表

基礎生物学プログラム　(2/2)

Academic Staff		Research Fields	Keywords
Associate Professor	Kunifumi TAGAWA	Study to elucidate the origin and evolution of Deuterostomia and Bilateria by analysing molecular developmental biology and comparative genomics of marine organisms such as Enteropneust hemichordate and Acoel flatworms.	Marine Organisms, EvoDevo, Comparative genomics
Associate Professor	Hiromi TSUBOTA	Studies of plants and vegetation focusing on the ecology, evolutionary biology, biogeography, phytosociology, and conservation of biotas on islands surrounded by ocean and its related area.	Biodiversity, Phytogeography, Molecular phylogeny
Associate Professor	Kozue HAMAO	Molecular mechanisms of cytoskeletal regulation and cell division in animal cells.	Cytoskeleton, Mitosis, Cytokinesis
Associate Professor	Jutarou FUKAZAWA	Molecular mechanisms of plant growth and development via plnat horomone Molecular mechanisms of plant hormone biosythesis, signaling and crosstalk.	Plant hormone, Transcriptional regulation, Signal transduction
Lecturer	Kazuki MORIGUCHI	Molecular mechanisms of bacteria-eukaryotes interactions. Molecular mechanisms at horizontal gene transfer, and the spread and diversity of genes caused by it.	Bacteria, Horizontal gene transfer, Interaction, Gene introduction

大学院統合生命科学研究科主指導教員一覧表

数理生命科学プログラム **(1/3)**

Academic Staff		Research Fields	Keywords
Professor	Makoto IIMA	Theoretical and experimental study of complex flows and models such as swimming/flying problems based on mathematical science.	Fluid mechanics, Swimming/Flying, Vortex dynamics
Professor	Shunsuke IZUMI	MALDI SALDI-IMS Development of MALDI matrix for protein analysis and search for chemical repellents using SALDI-IMS method.	, , SALDI-IMS MALDI matrix, Proteomics, SALDI-IMS method
Professor	Yoshihiro OMORI	Understanding molecular mechanisms of vertebrate morphogenesis, evolution, and pathogenesis of ophthalmology disease using teleost fish models based on genome science	GWAS Genome science, Teleost fish models, Neurodegenerative diseases, Vertebrate evolution, Genome wide association study
Professor	Atsushi SAKAMOTO	(1) ; (2) ; (3) ( ) (1) Molecular mechanisms for stress responses and adaptation in plants; (2) Metabolic plasticity-based strategies for plant growth and survival; (3) Basic and applied research on plant function towards its agricultural and industrial applications (improved performance under stress; algal bioenergy innovation, etc.).	Plant molecular function, Stress response, Metabolism and molecular physiology
Professor	Satoshi NAKATA	Research on phenomena which exhibit spatio-temporal development under nonequiliburim conditions, e.g., chemical oscillation, rhythm and pattern formation, self-organization, nonlinear phenomena (synchronization, bifurcation, hysteresis), and self-propulsion.	Self-organization, Pattern formation, Oscillation
Professor	Koichi Fujimoto	. , - - - - . . Theoretical study (mathematical modeling and data analysis) of evolving multi-level dynamics (gene expression, shape, and behaviors) in plants, animals, and microbes.	Theoretical Biology, Complex systems, Biophysics, Evolution, Diversity, Multi-scales
Specially Appointed Professor	Naoki HONDA	/ Data-driven mathematical modeling of various biological phenomena. Development of data analysis methods based on machine learning (statistical learning theory). Gene expression, cytoskeleton, immune systems, embryonic development, neural circuits, decision making, emotion/conflict.	Data-driven biology, Theoretical biology, Mathematical modeling, Machine learning
Professor	Takashi YAMAMOTO	Development of genome editing technology for various organisms. Generation of disease model cells and animals. Development of biofuel using microalgae. Analysis of molecular mechanisms during animal development.	Genome editing, Disease model, Animal development
Professor	Hidemasa BONO	Development of database technologies for genome editing and functional genomics by bioinformatic approach.	Genome editing, Bioinformatics, Functional genomics

大学院統合生命科学研究科主指導教員一覧表

数理生命科学プログラム　（2/3）

	Research Fields	Keywords

大学院統合生命科学研究科主指導教員一覧表

数理生命科学プログラム (3/3)

Academic Staff		Research Fields	Keywords
Associate Professor	Takuma SUGI	Behavioral systems biology and neural network aging.	Behavior, Imaging, Neural network aging
Associate Professor	Yoshihisa FUJIWARA	Effects of environmental factors of light, magnetic field, and gravity (microgravity and hypergravity) on biological phenomena and reactions of micro-organism such as Aspergillus oryzae. Influence of their factors on reactions, micro-structure, and function of chemical functional nano-materials.	Effecs of light, Magnetic field and gravity Photochemistry Aspergillus oryzae

大学院統合生命科学研究科主指導教員一覧表

生命医科学プログラム　(1/2)

Academic Staff		Research Fields	Keywords
Professor	Atsuhiko ISHIDA	Biochemistry on enzymes and proteins which mediate protein phosphorylation and dephosphorylation.	Enzyme, Neuron
Professor	Yasuhiro ISHIHARA	PM2.5 DHA Neuropharmacology and neurotoxicology on glial cells: Modulation of neurological disorders by chemical exposure (i.e. environmental chemicals and PM2.5) and neuroprotective action of unsaturated fatty acid such as DHA.	Glia, Harmful chemicals, Neuroprotection
Professor	Takuya IMAMURA	Understanding epigenomic mechanisms that underlie the development of primate brain.	, , RNA primate, brain, non-coding RNA
Professor	Kazuyoshi UKENA	Study on the physiological functions of neuronal substances regulating appetite and energy homeostasis.	Appetite, Obesity, Metabolic disease
Professor	Hajime OGINO	Genomic and epigenetic regulation of development and regeneration in vertebrates. Molecular mechanisms of genome evolution and environmental adaptation in amphibians.	Development, Regeneration, Evolution
Professor	Yoshihiro OMORI	Understanding molecular mechanisms of vertebrate morphogenesis, evolution, and pathogenesis of ophthalmology disease using teleost fish models based on genome science	GWAS Genome science, Teleost fish models, Neurodegenerative diseases, Vertebrate evolution, Genome wide association study
Professor	Yutaka KIKUCHI	Construction of musculoskeletal systems and molecular mechanisms of their breakdown.	Musculoskeletal systems
Professor	Takahiro CHIHARA	Molecular mechanism underlying neural network formation, maturation and maintenance. Genetic studies to reveal molecular mechanism for the interaction between environment (nutrition, odor and various stresses etc.) and physiological condition (longevity and behavior etc.).	Neural network, Olfaction, Longevity
Professor	Toshinori HAYASHI	Study of organ regeneration and development using urodele amphibian. Regulatory mechanism of cell proliferation in organ regeneration.	Iberian ribbed newt, Organ regeneration, Development
Professor	Takashi YAMAMOTO	Development of genome editing technology and generation of disease model cells and animals.	Genome editing, Disease model
Professor	Hidemasa BONO	Development of database technologies for genome editing and functional genomics by bioinformatic approach.	Genome editing, Bioinformatics, Functional genomics

大学院統合生命科学研究科主指導教員一覧表

生命医科学プログラム　(2/2)

Academic Staff		Research Fields	Keywords
Visiting Professor	Keiichi HATAKEYAMA	Cancer genome analysis to integrate of clinical information and genome data. Improving the accuracy of cancer genome analysis using tumor cell enrichment and its application in clinical practice.	Cancer genome, mutation, somatic/germline alteration, clinical application
Visiting Professor	Tomonobu M WATANABE	Stem cell researches with development of optical measurement technologies to quantify biological phenomena, and medical/industrial applications of them.	Optical spetcroscopy, quantitative biology, biophysics, stem cell
Associate Professor	Takeshi IGAWA	Genome evolution underlying speciation and environmental adaptation of amphibians.	Amphibians, Adaptive evolution, Genomics
Associate Professor	Masaru UENO	DNA Study on molecular mechanisms of telomere maintenance and DNA repair and their applications for development of anti-cancer and anti-ageing agents.	Telomere, Cancer, Aging
Associate Professor	Misako OKUMURA	. Molecular mechanism of phototransduction. Molecular mechanism of phenotypic plasticity.	, Nematode, Photoreceptor, Phenotypic plasticity
Associate Professor	Kazunori KUME	Study on the control mechanisms of cell structure (organelles and cell polarity etc.) which ensures cellular functions.	Cell structure, Organelle, Cell polarity
Associate Professor	Naoaki SAKAMOTO	Research for transcriptional regulation of morphogenetic genes, nuclear dynamics of gene, chromatin and chromosome during development, and mechanism of insulator activity, using the sea urchin development as a model.	Sea urchin development, Transcription, Nuclear dynamics
Associate Professor	Takuma SUGI	, Behavioral systems biology and neural network aging.	, Behavior, Imaging, Neural network aging
Associate Professor	Kozue HAMAO	Molecular mechanisms of cytoskeletal regulation and cell division in animal cells.	Cytoskeleton, Mitosis, Cytokinesis
Associate Professor	Masayuki YOSHIDA	Biological basis of emotion, learning, and mind in animals.	Animal psychology, Emotion, Neuroscience