

List of Supervisors and Research Fields

Master's Course

Transdisciplinary Life Science Course, Division of Life Science

Laboratory	Supervisors		Research Topics
Bioinformation and Molecular Science	Professor	Min Yao	Protein, nucleic acid, transcription / translation control, disease related factor, signal transduction, infection regulation, X-ray structural biology, protein crystallography, computer science, protein science, biophysics, http://altair.sci.hokudai.ac.jp/g6/index-e.html
	Associate Professor	Toyoyuki Ose	
	Specially Appointed Assistant Professor	Jian Yu	
	Associate Professor	Ryota Uehara	Cell division, ploidy, cytoskeleton, motor protein, self organization, cancer, aging, liver disease, microscopic analysis, biochemistry, molecular biology, cell culture, mouse model, transcriptome, mathematical modeling, compound screen https://tenure-track.cris.hokudai.ac.jp/lab/uehara/
	Specially Appointed Lecturer	Shinji Nakaoka	mathematical biology, systems biology, bioinformatics, microbial ecology, precision medicine, multi-omics, mathematical modeling, machine learning, big data analysis http://altair.sci.hokudai.ac.jp/infmcb/index-e.html
Biomaterials Science	Professor	Kenji Monde	Chemical Biology, Chirality, Organic Synthesis, Inhibitors, Vibrational Circular Dichroism, Helix, Lipid Mediator, Glycoconjugate, Medicinal Chemistry http://altair.sci.hokudai.ac.jp/infchb/
	Lecturer	Tohru Taniguchi	
	Assistant Professor	Yuta Murai	
	Professor	Nobuyuki Tamaoki	molecular machine, motor protein, photochromic compound, azobenzene, liquid crystal, self-organization, inter-molecular interaction, organic synthesis, nano bio-machine, single molecular measurement, chirality http://tamaoki.es.hokudai.ac.jp/english/index.html
	Associate Professor	Yuna Kim	
	Assistant Professor Assistant Professor	Kazuya Matsuo Yoshimitsu Sagara	
Functional Cellular Science	Professor	Tokiyoshi Ayabe	innate immunity, antimicrobial peptide, mucosal immunity, intestinal epithelial cell, Paneth cell, inflammatory bowel disease, defensin, molecular targeted therapy, stem cell, regenerative medicine, intestinal microbiota, life-style disease, food and medicine http://altair.sci.hokudai.ac.jp/infsig/english/
	Associate Professor	Kiminori Nakamura	
	Professor	Masataka Kinjo	Fluorescence Correlation Spectroscopy, Fluorescence Cross Correlation Spectroscopy, single molecule detection, ALS, molecular interaction, Live cell imaging, FCS, FCCS, C. elegans http://altair.sci.hokudai.ac.jp/infmcd/English/top_eng.html
	Lecturer	Akira Kitamura	

Transdisciplinary Life Science Course, Division of Life Science

Laboratory	Supervisors		Research Topics
Functional and Regulatory Life Science	Professor Professor Assistant Professor	Shin-Ichiro Nishimura Hiroshi Hinou Fayna Maria Garcia Martin	Chemical biology, Medicinal chemistry, Glycomedicine, Automated glycosynthesis, Glycomics, Glycobiology, Biomarker discovery, Dynamic epitope, Glycopeptide, Antibody drug, Glycoconjugates probe, Microarray http://altair.sci.hokudai.ac.jp/g4/
	Professor	Toshiaki Koda	neurodegenerative disease, poly-glutamine disease, autophagy, model mice, embryonic engineering http://altair.sci.hokudai.ac.jp/infemb/index.html
Biomolecular Adaptation Science (Inter-field Cooperation with AIST)	Visiting Professor Visiting Professor Visiting Associate Professor Visiting Associate Professor	Sakae Tsuda Yasuo Komatsu Hidemasa Kondo Yu Hirano	Antifreeze protein, Ice-binding function, Snow mold fungi, Gene expression, Biomolecular NMR, X-ray structural analysis, Biodiversity, Cell-preservation peptide, Reporter Assay, 3D molecular structure, Gene detection, Nucleic acid drugs, Functional DNA/RNA, Molecular detection, Cell-function evaluation, Electrochemistry http://altair.sci.hokudai.ac.jp/g_renkei/top_e.html https://unit.aist.go.jp/bpri/bpri-bimo/research_kakusan.html

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List of Supervisors and Research Fields

Master's Course

Biosystems Science Course, Division of Life Science

Laboratory	Supervisors		Research Topics
Higher Order Cellular Functions	Professor Assistant Professor Assistant Professor	Kazuma Tanaka Tetsuo Mioka Takuma Kishimoto	cell polarity, phospholipid asymmetry, membrane traffic, flippase, yeast http://www.igm.hokudai.ac.jp/molint/index.html
	Professor Assistant Professor	Tomomichi Fujita Ooikock Teh	plant, evolutionary development, stem cell, cell polarity, cell cycle, cell proliferation and differentiation, environmental stress, abscisic acid, moss, space utilization science http://www.sci.hokudai.ac.jp/PlantSUGOIne/
	Associate Professor	Masaaki Watahiki	auxin, feedback gene regulation, live imaging, plant morphogenesis http://www.sci.hokudai.ac.jp/watahiki/mkwhp/index.html
	Professor	Sanae M. M. Iguchi-Ariga	protooncogene, mutagen, oxidative stress, cancer, neurodegenerative disease, cellular and molecular biology, proliferation, transformation, apoptosis http://www.agr.hokudai.ac.jp/emolb/index.html
Environmental Life Science	Professor Assistant Professor	Atsushi Kato Hidetaka Ito	gene expression, genome evolution, non-coding RNAs, retrotransposon, heat stress, epigenetic effects, plants, arabidopsis http://www.sci.hokudai.ac.jp/grp/keitai/sci.hokudai/KeitaiIII_mail.htm
	Professor Assistant Professor	Junji Yamaguchi Takeo Sato	environmental adaptation, ubiquitin-proteasome system, nutrient metabolism, signal transduction, nutrient stress, plant immunity, proteomics http://www.sci.hokudai.ac.jp/CSF2-web/
	Associate Professor	Yukako Chiba	mRNA stability, stress response, arabidopsis https://www.sci.hokudai.ac.jp/~yukako/
	Associate Professor Assistant Professor Assistant Professor	Ryouichi Tanaka Hisashi Ito Atsushi Takabayashi	photosynthesis, chlorophyll, cyanobacteria, algae, higher plants, arabidopsis, plant molecular biology, plant biochemistry http://www.lowtem.hokudai.ac.jp/plantadapt/ayumi/

Biosystems Science Course, Division of Life Science

Laboratory	Supervisors		Research Topics
Animal Behavior and System Control	Professor Assistant Professor	Toshiya Matsushima Nina Patzke	neuro-economics and foraging theory, impulsiveness and risk sensitivity, birds, imprinting (Toshiya Matsushima); comparative neuroanatomy, encephalization, large brains of whales and cetaceans, cognitive hypothesis, thermogenesis hypothesis (Nina Patzke) http://www.sci.hokudai.ac.jp/~matusima/chinou3/Welcome.html
	Professor Assistant Professor	Makoto Mizunami Hiroshi Nishino	learning, olfaction, memory, insect, microbrain, neuroethology, physiology, genetics, pest control https://www.sci.hokudai.ac.jp/~mizunami/MICROB~2/ http://www.es.hokudai.ac.jp/labo/nishino/
	Professor	Hiroto Ogawa	brain, neuroscience, electrophysiology, imaging, information processing, neural circuit, coding, sensorimotor integration, insect https://www.sci.hokudai.ac.jp/~hogawa/English/
	Associate Professor	Kazuhiro Wada	vocal learning, critical period, epigenetics, neural activated gene, songbird, neuroethology, genome, behaviour, DNA methylation, stuttering http://www.wada-lab.org/
	Associate Professor	Masayo Soma	behavior, cognition, communication, bird song, learning, life history http://www.lfsci.hokudai.ac.jp/search/system/soma.html
	Associate Professor	Hitoshi Aonuma	Synthetic neuroethology, neurobiology, electrophysiology, biomechanics, robotics inspired biology, neurogenetics, neuromodulation, social behavior, aggression, ultra fast movement, insect http://nmac2.es.hokudai.ac.jp/index.html
	Associate Professor	Nobuaki Tanaka	sensory processing, neuroendocrine system, Drosophila genetics, pygmy squid https://www.sci.hokudai.ac.jp/grp/tanaka/lab/index.html

Biosystems Science Course, Division of Life Science

Laboratory	Supervisors		Research Topics
Reproductive and Developmental Sciences	Professor	Masakane Yamashita	oocyte maturation, spermatogenesis, meiosis, translational control, transgenic fish https://www.sci.hokudai.ac.jp/~myama/index_e.html
	Professor	Yoshinao Katsu	endocrinology, steroid hormone, nuclear receptor, thermoreceptor, evolution, endocrine disruptor https://www.repdev-katsu.jp/index.html
	Professor Assistant Professor Assistant Professor	Asato Kuroiwa Shusei Mizushima Ikuya Yoshida	sex determination, sex chromosome, X chromosome inactivation, fertilization, evolution, the spiny rat, chicken, quail, mouse https://sites.google.com/site/kuroiwagroup/home
	Associate Professor	Kazuhiro Kitada	model animals, human diseases, genome modification, gene function, mouse, rat https://sites.google.com/site/kitadalab/
	Associate Professor	Tomoya Kotani	oocyte, embryonic development, maternal factor, real-time imaging, zebrafish, mouse
	Associate Professor	Atsushi Kimura	transcription, epigenetics, gene regulation, long noncoding RNA, dual promoter-enhancer, reproduction, spermatogenesis, protease https://www.sci.hokudai.ac.jp/~akimura/Molecular/Welcome.APK.html
	Associate Professor	Katsueki Ogiwara	ovary, ovulation, follicle selection, endocrine regulation, mouse, zebrafish, medaka https://www.sci.hokudai.ac.jp/~kogi/Reproductive2/Welcome.html

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List of Supervisors and Research Fields

Master's Course

Biomedical and Pharmaceutical Science Course, Division of Life Science

Fields	Supervisors		Research Topics
Biochemistry	Professor Associate Professor Assistant Professor	Akio Kihara Takayuki Sassa Yusuke Ohno	lipid, membrane, biochemistry, metabolism, lipid mediator, barrier formation http://www.pharm.hokudai.ac.jp/seika/index.html
RNA Biology	Professor Lecturer Assistant Professor	Shinichi Nakagawa Hiroschi Maita Saori Yokoi	noncoding RNA, epigenetics, nuclear structures, RNA processing https://sites.google.com/site/hokudairnabiologyj/home
Neuroscience	Specially Appointed Professor Associate Professor Assistant Professor Assistant Professor	Toshiharu Suzuki Hidenori Taru Saori Hata Tadashi Nakaya	neuroscience, cell biology, genetics, synapse, aging, protein trafficking, synaptopathy, neurodegenerative diseases http://www.pharm.hokudai.ac.jp/shinkei/index.html
Immunology	Professor Lecturer Lecturer Assistant Professor	Tadashi Matsuda Ryuta Muromoto Junichi Kashiwakura Yuichi Kitai	host defense, immunity, inflammation, infection, cytokine, oncogenesis, signal transduction http://www.pharm.hokudai.ac.jp/eisei/
Biomolecular Science	Professor Associate Professor Assistant Professor	Katsumi Maenaka Kimiko Kuroki Atsushi Furukawa	immunology, infectious disease, cell surface receptor, X-ray crystallography, protein engineering, biologics, drug discovery, chemical library screening, in silico screening, virology, microbiology http://convallaria.pharm.hokudai.ac.jp/bunshi/
Natural Products Chemistry	Professor Assistant Professor	Toshiyuki Wakimoto Kenichi Matsuda	bioactive natural products, isolation, structure elucidation, stereochemistry, structure-activity relationship, molecular targets, biosynthesis, drug leads, bioprobes http://www.pharm.hokudai.ac.jp/tennen/index.html
Fine Synthetic Chemistry	Professor Associate Professor Assistant Professor	Yoshihiro Sato Yoshihiro Oonishi Ryohei Doi	organic synthesis, organometallic chemistry, transition-metal catalysis, asymmetric catalysis, natural product synthesis, utilization of gaseous molecules, green chemistry http://gouka.pharm.hokudai.ac.jp/
Synthetic and Industrial Chemistry	Professor Lecturer Assistant Professor	Shigeki Matsunaga Tatsuhiko Yoshino Masahiro Kojima	synthetic organic chemistry, asymmetric catalysis, bimetallic cooperative catalysis, natural product synthesis, oligosaccharide synthesis based on new glycosidation method http://www.pharm.hokudai.ac.jp/yakuzou/

Biomedical and Pharmaceutical Science Course, Division of Life Science

Fields	Supervisors		Research Topics
Organic Chemistry for Drug Development	Professor Lecturer Assistant Professor	Satoshi Shuto Mizuki Watanabe Koichi Fujiwara	medicinal chemistry: drug design http://www.pharm.hokudai.ac.jp/youki/index.html
Pharmacology	Professor Lecturer Lecturer Assistant Professor	Masabumi Minami Taiju Amano Hiroshi Nomura Natsuko Hitora	neuropharmacology, electrophysiology, emotion, pain, addiction, BBB http://www.pharm.hokudai.ac.jp/yakuri/index.html
Molecular Design of Pharmaceutics	Professor Associate Professor Assistant Professor Assistant Professor	Hideyoshi Harashima Yuma Yamada Takashi Nakamura Yusuke Sato	drug delivery system, organelle-targeting, nanomedicine, gene delivery, siRNA delivery, intracellular trafficking, imaging, vaccine, cancer therapy http://www.pharm.hokudai.ac.jp/yakusetu/index.html
(Innovative Nanomedicine)	Professor Associate Professor Assistant Professor Assistant Professor Specially Appointed Assistant Professor	Hideyoshi Harashima Yuma Yamada Takashi Nakamura Yusuke Sato Ikramy Abdel Raheem Khalil Ibraheem	vascular-targeted drug delivery, nanomedicine, active targeting, tumor, liver, adipose tissue, specific ligand http://www.pharm.hokudai.ac.jp/mirai/
Molecular Imaging	Professor Lecturer Assistant Professor	Mikako Ogawa Hideo Takakura Motofumi Suzuki	molecular imaging, imaging probe, PET, optical imaging, MRI http://www.pharm.hokudai.ac.jp/bunseki/index.html
Clinical Pharmaceutics & Therapeutics	Professor Associate Professor Assistant Professor Assistant Professor	Ken Iseki Masaki Kobayashi Katsuya Narumi Ayako Furugen	transporter, clinical research, cancer pharmacotherapy, infection control http://rinshoyakuzaigaku.pharm.hokudai.ac.jp/

Biomedical and Pharmaceutical Science Course, Division of Life Science

Fields	Supervisors		Research Topics
Pathophysiology & Therapeutics	Professor Assistant Professor	Hiroshi Takeda Naoto Okubo	inflammatory bowel disease, MIF, hypoxia, ghrelin, anorexia http://www.pharm.hokudai.ac.jp/byoutai/index.html
Pharmacokinetics	Professor Associate Professor Assistant Professor Assistant Professor	Mitsuru Sugawara Yoh Takekuma Syungo Imai Izumi Kato	pharmacokinetics, transporter, drug metabolism, pharmaceuticals http://www.pharm.hokudai.ac.jp/doutai/index.html
Center for Research and Education on Drug Discovery (Synthetic Drug Discovery)	Professor Lecturer Assistant Professor	Satoshi Ichikawa Fumika Yakushiji Akira Katsuyama	organic synthesis, natural products, drug discovery, chemical library screening, in silico screening, intractable disease, chemical biology https://japanese-apricot.pharm.hokudai.ac.jp/gouseiyaku/index.php
Center for Research and Education on Drug Discovery (Biologics and Drug Development)	Professor Specially Appointed Associate Professor Assistant Professor Specially Appointed Assistant Professor Specially Appointed Assistant Professor Specially Appointed Assistant Professor Specially Appointed Assistant Professor	Katsumi Maenaka Naoyoshi Maeda Masato Sumi Takao Nomura Hideo Fukuhara Syunsuke Kita Takashi Tadokoro	biologics, drug discovery, chemical library screening, in silico screening, intractable disease http://japanese-apricot.pharm.hokudai.ac.jp/

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List of Supervisors and Research Fields

Master's Course

Division of Soft Matter, Graduate School of Life Science

Laboratory	Supervisors		Research Topics
Soft Matter Materials Science	Professor Professor	Jian Ping Gong Takayuki Kurokawa	Polymer gel, Double network gel, Soft & wet matter, Sacrificial bond, High strength, High toughness, Composite, Friction, Lubrication, Liquid crystal, Structure color, Self-organization, Biomaterial, Artificial cartilage, Cell scaffold http://altair.sci.hokudai.ac.jp/g2/index_e.html
	Associate Professor Assistant Professor Specially Appointed Assistant Professor	Tasuku Nakajima Daniel R King Takayuki Nonoyama	
	Professor Associate Professor Assistant Professor	Kuniharu Ijiro Hideyuki Mitomo Yusuke Yonamine	Self-organization, self-assembly, biomimetics, functional device, biosensor, DNA, protein, biomolecule, cell, molecular recognition, drug delivery system, vaccine, gold nanoparticle, surface plasmon, stimulus-response, nanocapsule https://chem.es.hokudai.ac.jp/en/
Biomolecular Soft Matter	Professor Lecturer Assistant Professor	Makoto Demura Takashi Kikukawa Takashi Tsukamoto	Peptides, proteins, membrane proteins, functional analysis, NMR, photobiology, rhodopsin, photoactive proteins, biomimicry, biomaterials, soft matters, bioinformatics, ion transport, membrane transporters, SDGs http://altair.sci.hokudai.ac.jp/infana/
	Professor	Tomoyasu Aizawa	
Soft Matter Biophysics	Professor Assistant Professor	Hisashi Haga Seiichiro Ishihara	Cell Mechanics, Collective Cell Behavior, 3D Morphogenesis, Cancer Invasion, Atomic Force Microscopy http://altair.sci.hokudai.ac.jp/g3/
	Professor Associate Professor Assistant Professor	Toshiyuki Nakagaki Katsuhiko Sato Yukinori Nishigami	

Division of Soft Matter, Graduate School of Life Science

Laboratory	Supervisors		Research Topics
Soft Matter Medical Science	Associate Professor	Masumi Tsuda	biomaterial, cancer stem cell, molecular targeted therapy, regenerative medicine, cartilage regeneration, neuroregeneration http://patho2.med.hokudai.ac.jp
	Lecturer	Tomohiro Onodera	Orthopaedic Surgery, Joint Surgery, Regenerative Medicine, Musculoskeletal System, Animal Model, Scaffold, Cartilage, Bone, Meniscus, Biomaterials, Soft Matter, Clinical Application, Translational Research http://www.hokudaiseikei.jp/

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