

List of Supervisors and Research Fields

Master's Course

Transdisciplinary Life Science Course, Graduate School of Life Science

Laboratory	Supervisors		Research Topics
Bioinformation and Molecular Science	Professor Lecturer	Makoto Demura Takashi Kikukawa	membrane protein, NMR, photobiology, rhodopsin, peptide, structural biology, biomimicry, ion-pump, flash-photolysis, multidrug resistance http://altair.sci.hokudai.ac.jp/infana/
	Professor Associate Professor Assistant Professor	Min Yao Yoshikazu Tanaka Koji Kato	structural biology, protein crystallography, protein science, biophysics, nucleic acid, translation, pathogenic bacteria, SBDD http://altair.sci.hokudai.ac.jp/g6/
	Professor Lecturer Assistant Professor	Chikashi Obuse Koji Nagao Yoko Hayashi	cell cycle, replication, mitosis, heterochromatin, epigenetics, epigenome, genome, genetics, genomics, proteomics, bio-informatics, transcription, cell biology, reprogramming http://altair.sci.hokudai.ac.jp/infgen/
	Professor Associate Professor	Makoto Demura [※] Tomoyasu Aizawa	NMR, peptide, protein, structural biology http://altair.sci.hokudai.ac.jp/g5/
	Professor Assistant Professor	Tamiki Komatsuzaki Goro Nishimura	theory, single molecular biophysics, systems biology, time series analysis, protein functions, plant cell biology, nonribosomal peptide synthetase http://mlns.es.hokudai.ac.jp/
Biomaterials Science	Professor Associate Professor Assistant Professor Assistant Professor Specially Appointed Assistant Professor	Jian Ping Gong Takayuki Kurokawa Tasuku Nakajima Daniel R King Takayuki Nonoyama	tissues, soft & wet material, hydrogel, strength, toughness, friction, lubrication, biomaterial, artificial cartilage, regenerative medicine, biomineralization http://altair.sci.hokudai.ac.jp/g2/
	Professor Associate Professor Assistant Professor	Makoto Demura [※] Akimasa Fukui Kazuya Furusawa	embryology, morphogenesis, gastrulation/ anisotropic gel, self-organization, diffusion, polymer physics, biomechanics http://altair.sci.hokudai.ac.jp/g1/

※Due to the absence of a professor, Dean of Faculty of Advanced Life Science will act for it.

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Laboratory	Supervisors		Research Topics
Biomaterials Science	Professor Assistant Professor Assistant Professor	Kenji Monde Tohru Taniguchi Yuta Murai	chemical biology, chirality, vibrational circular dichroism, bio organic chemistry, organic synthesis, chiroptical spectroscopy http://altair.sci.hokudai.ac.jp/infchb/
	Professor Assistant Professor Assistant Professor Assistant Professor	Nobuyuki Tamaoki Yuna Kim Kazuya Matsuo Yoshimitsu Sagara	motor protein, synthetic molecular machine, organic synthesis, photochemistry, smart molecules, molecular assembly, light energy, nano machine http://tamaoki.es.hokudai.ac.jp/
Functional Cellular Science	Professor Professor Assistant Professor	Hisashi Haga Kazushige Kawabata Takeomi Mizutani	cell mechanics, mechanosensing, collective cell migration, cancer invasion http://altair.sci.hokudai.ac.jp/g3/
	Professor Associate Professor Specially Appointed Assistant Professor	Tokiyoshi Ayabe Kiminori Nakamura Naoya Sakuragi	mucosal immunity, innate immunity, Paneth cell, antimicrobial peptide, α -defensin, dysbiosis, microbiota, ulcerative colitis, Crohn's disease, lifestyle disease http://altair.sci.hokudai.ac.jp/infsig/
	Professor Assistant Professor Specially Appointed Assistant Professor	Masataka Kinjo Akira Kitamura Johtaro Yamamoto	fluorescence correlation spectroscopy, cell biology, live cell imaging, biophysics, protein aggregation, protein misfolding, nuclear receptor, wavefront control http://altair.sci.hokudai.ac.jp/infncd/
Functional and Regulatory Life Science	Professor Associate Professor Assistant Professor	Shin-Ichiro Nishimura Hiroshi Hinou Fayna Maria Garcia Martin	drug discovery, biopharmaceuticals, antibody, glycoconjugates, glycomics, biomarkers, chemical biology http://altair.sci.hokudai.ac.jp/g4/
	Professor	Toshiaki Koda	disease model mice, poly-glutamine disease, Huntington's disease, embryonic engineering http://altair.sci.hokudai.ac.jp/infemb/index.html

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Functional and Regulatory Life Science	Professor Associate Professor Assistant Professor	Toshiyuki Nakagaki Katsuhiko Sato Shigeru Kuroda	physical ethology, biomechanics, cell biology, mathematical modeling, active soft matter, nonlinear dynamics, field work http://pel.es.hokudai.ac.jp/
	Specially Appointed Assistant Professor	Ryota Uehara	cell division, cytoskeleton, motor proteins, mitotic spindle, contractile ring, self-organization, phenotypic plasticity, live cell imaging, cell manipulation http://tenure-track.cris.hokudai.ac.jp/lab/uehara/
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, gene expression analysis and biological function of foods, protein structure, oligonucleotide, functional RNA, oligonucleotide therapeutics http://altair.sci.hokudai.ac.jp/g_renkei/top.html https://unit.aist.go.jp/bpri/bpri-bimo/research_kakusan.html

List of Supervisors and Research Fields

Master's Course

Biosystems Science Course, Graduate School of Life Science

Laboratory	Supervisors		Research Topics
Functional Genome Science	Professor	Atsushi Kato	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
	Assistant Professor	Hidetaka Ito	
	Associate Professor	Shigeharu Takiya	Hox genes, transcriptional regulation, silkworm, ecdysis, insect hormone, X chromosome inactivation, reprogramming, stem cell http://www.sci.hokudai.ac.jp/bio/teacher/t-0370.php , http://www.sci.hokudai.ac.jp/bio/teacher/t-0400.php
	Assistant Professor	Ikuya Yoshida	
Associate Professor	Kazuhiro Kitada	model animals, human diseases, genome modification, gene function, mouse, rat https://sites.google.com/site/kitadalab/	
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	
Higher Order Cellular Functions	Professor	Kazuma Tanaka	cell polarity, phospholipid asymmetry, membrane traffic, flippase, yeast http://www.igm.hokudai.ac.jp/molint/index.html
	Assistant Professor	Takaharu Yamamoto	
	Assistant Professor	Tetsuo Mioka	
	Professor	Tomomichi Fujita	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
Associate Professor	Kei Sonoyama	gut physiology, prebiotics, probiotics, gut microbiota, allergy, metabolic syndrome, hibernation http://www.agr.hokudai.ac.jp/fbc/sonoyama/	
Associate Professor	Kyoko Miura	Naked mole-rat, cancer, longevity, aging, senescence, eusociality http://www.igm.hokudai.ac.jp/debanezumi/	
Assistant Professor	Yoshimi Kawamura		

Biosystems Science Course, Graduate School of Life Science

Laboratory	Supervisors		Research Topics
Environmental Life Science	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	Yasuhiro Takada	psychrophilic bacteria, cold-adapted enzymes, enzyme activity at low temperatures, cold-induced gene expression, regulation of gene expression http://www.sci.hokudai.ac.jp/~ytaka/takada.html
	Professor	Satoshi Naito	arabidopsis thaliana, translation arrest, mRNA degradation, methionine biosynthesis http://www.agr.hokudai.ac.jp/arabi/
	Professor Associate Professor Assistant Professor Assistant Professor	Ayumi Tanaka 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/
Animal Behavior and System Control	Professor	Toshiya Matsushima	neuroethology, impulsiveness, risk sensitivity, chicks, tits, striatum, nucleus accumbens, decision making, imprinting http://www.sci.hokudai.ac.jp/~matusima/chinou3/Welcome.html
	Professor Specially Appointed Assistant Professor	Makoto Mizunami Nobuaki Tanaka	learning, olfaction, memory, insect, microbrain, neuroethology, physiology, genetics https://www.sci.hokudai.ac.jp/~mizunami/MICROB~2/ http://www.cris.hokudai.ac.jp/tanaka/Lab/index.html
	Professor	Hiroto Ogawa	brain, neuroscience, electrophysiology, imaging, information processing, neural circuit, coding, sensorimotor integration, insect http://www.sci.hokudai.ac.jp/~hogawa/index.html

Biosystems Science Course, Graduate School of Life Science

Laboratory	Supervisors		Research Topics
Animal Behavior and System Control	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 Assistant Professor	Hitoshi Aonuma Hiroshi Nishino	Synthetic neuroethology, neurobiology, electrophysiology, neurorobotics, roboticbiology, neurogenetics, neuromodulation, social behavior, aggression, insect http://ncmac2.es.hokudai.ac.jp/index.html
Reproductive and Developmental Sciences	Professor	Masakane Yamashita	oocyte maturation, spermatogenesis, meiosis, translational control, transgenic fish http://www.sci.hokudai.ac.jp/~myama/seitai1/Welcome.html
	Professor	Yoshinao Katsu	endocrinology, steroid hormone, nuclear receptor, sex-determination, evolution, endocrine disruptor http://www.repdev-katsu.jp/index.html
	Professor	Asato Kuroiwa	sex determination, sex chromosome, evolution, spiny rat, chicken https://sites.google.com/site/kuroiwagroup/home
	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

List of Supervisors and Research Fields

Master's Course

Biomedical and Pharmaceutical Science Course, Graduate School of Science

Fields	Supervisors		Research Topics
Biochemistry	Professor Associate Professor Assistant Professor Assistant Professor	Akio Kihara Takayuki Sassa Keisuke Obara Yusuke Ohno	lipid, membrane, biochemistry, metabolism, lipid mediator, barrier formation http://www.pharm.hokudai.ac.jp/seika/index.html
RNA Biology	Professor Lecturer	Shinichi Nakagawa Hiroshi Maita	noncoding RNA, epigenetics, nuclear structures, RNA processing http://www.pharm.hokudai.ac.jp/RNAbio/index.html
Neuroscience ※Fall selection will not be conducted.	Professor Associate Professor Assistant Professor Assistant Professor	Toshiharu Suzuki Hidenori Taru Saori Hata Tadashi Nakaya	cell biology, alzheimer's disease, synapse formation, vesicular trafficking by kinesin motor, alcadein, X11L, app, als, gene expression. http://www.pharm.hokudai.ac.jp/shinkei/index.html
Immunology ※Fall selection will not be conducted.	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/index.html
Biomolecular Science	Professor Associate Professor Assistant Professor Assistant Professor	Katsumi Maenaka Toyoyuki Ose 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, natural product biosynthesis http://convallaria.pharm.hokudai.ac.jp/bunshi/
Natural Products Chemistry	Professor Lecturer Assistant Professor	Toshiyuki Wakimoto Takefumi Kuranaga Yoko Egami	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 Assistant Professor	Yoshihiro Sato Yoshihiro Oonishi Tsuyoshi Mita 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 ※Fall selection will not be conducted.	Professor Associate Professor Assistant Professor	Shigeki Matsunaga Masahiro Anada Tatsuhiko Yoshino	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, Graduate School of Science

Fields	Supervisors		Research Topics
Organic Chemistry for Drug Development ※Fall selection will not be conducted.	Professor Lecturer Assistant Professor	Satoshi Shuto Mizuki Watanabe Hayato Fukuda	medicinal chemistry: drug design http://www.pharm.hokudai.ac.jp/yuuki/index.html
Catalysis in Organic Synthesis	Professor Assistant Professor	Tamotsu Takahashi Zhiyi Song	organometal, catalytic reaction, selective reaction, organic material, asymmetric synthesis http://www.cat.hokudai.ac.jp/takahashi/
Pharmacology ※Fall selection will not be conducted.	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 Kouji 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 Specially Appointed Assistant Professor Specially Appointed Assistant Professor	Hideyoshi Harashima Yu Sakurai 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 ※Fall selection will not be conducted.	Professor Assistant Professor Assistant Professor	Mikako Ogawa Yoichi Shimizu Hideo Takakura	molecular imaging, imaging probe, PET, optical imaging, MRI http://www.pharm.hokudai.ac.jp/bunseki/index.html
Clinical Pharmaceutics & Therapeutics ※Fall selection will not be conducted.	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/

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Fields	Supervisors		Research Topics
Pathophysiology & Therapeutics ※Fall selection will not be conducted.	Professor Lecturer	Hiroshi Takeda Kouji Nakagawa	inflammatory bowel disease, MIF, hypoxia, ghrelin, anorexia http://www.pharm.hokudai.ac.jp/org/byoutaio1.html
Pharmacokinetics ※Fall selection will not be conducted.	Professor Associate Professor Assistant Professor Assistant Professor	Mitsuru Sugawara Yoh Takekuma Masato Sumi Yuki Sato	pharmacokinetics, transporter, drug metabolism, pharmaceuticals http://www.pharm.hokudai.ac.jp/lab_17.html
Center for Research and Education on Drug Discovery (Synthetic Drug Discovery) ※Fall selection will not be conducted.	Professor Associate Professor Lecturer Assistant Professor	Satoshi Ichikawa Masahiro Sakaitani Fumika Yakushiji Kousuke Sato	organic synthesis, natural products, drug discovery, chemical library screening, in silico screening, intractable disease http://japanese-apricot.pharm.hokudai.ac.jp/gouseiyaku/
Center for Research and Education on Drug Discovery (Biologics and Drug Development)	Professor Specially Appointed Professor Specially Appointed Associate Professor Assistant Professor Specially Appointed Assistant Professor Specially Appointed Assistant Professor Specially Appointed Assistant Professor Specially Appointed Assistant Professor Specially Appointed Assistant Professor	Katsumi Maenaka Akira Matsuda Naoyoshi Maeda Izumi Kato Takao Nomura Hideo Fukuhara Takanori Matsumaru Syunsuke Kita Takashi Tadokoro	biologics, drug discovery, chemical library screening, in silico screening, intractable disease http://japanese-apricot.pharm.hokudai.ac.jp/