

## 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 <a href="http://altair.sci.hokudai.ac.jp/infana/">http://altair.sci.hokudai.ac.jp/infana/</a>
	Professor Associate Professor Assistant Professor	Min Yao Yoshikazu Tanaka Koji Kato	structural biology, protein crystallography, protein science, biophysics, nucleic acid, translation, pathogenic bacteria, SBDD <a href="http://altair.sci.hokudai.ac.jp/g6/">http://altair.sci.hokudai.ac.jp/g6/</a>
	Professor Associate Professor	Makoto Demura <sup>※</sup> Tomoyasu Aizawa	NMR, peptide, protein, structural biology <a href="http://altair.sci.hokudai.ac.jp/g5/">http://altair.sci.hokudai.ac.jp/g5/</a>
	Professor Assistant Professor	Tamiki Komatsuzaki Goro Nishimura	theory, single molecular biophysics, systems biology, time series analysis, protein functions, plant cell biology, nonribosomal peptide synthetase <a href="http://mlns.es.hokudai.ac.jp/">http://mlns.es.hokudai.ac.jp/</a>
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 <a href="http://altair.sci.hokudai.ac.jp/g2/">http://altair.sci.hokudai.ac.jp/g2/</a>
	Professor Associate Professor Assistant Professor	Makoto Demura <sup>※</sup> Akimasa Fukui Kazuya Furusawa	embryology, morphogenesis, gastrulation/ anisotropic gel, self-organization, diffusion, polymer physics, biomechanics <a href="http://altair.sci.hokudai.ac.jp/g1/">http://altair.sci.hokudai.ac.jp/g1/</a>
	Professor Assistant Professor Assistant Professor	Kenji Monde Tohru Taniguchi Yuta Murai	chemical biology, chirality, vibrational circular dichroism, bio organic chemistry, organic synthesis, chiroptical spectroscopy <a href="http://altair.sci.hokudai.ac.jp/infchb/">http://altair.sci.hokudai.ac.jp/infchb/</a>
	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 <a href="http://tamaoki.es.hokudai.ac.jp/">http://tamaoki.es.hokudai.ac.jp/</a>

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

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Functional Cellular Science	Professor Professor Assistant Professor	Hisashi Haga Kazushige Kawabata Takeomi Mizutani	cell mechanics, mechanosensing, collective cell migration, cancer invasion <a href="http://altair.sci.hokudai.ac.jp/g3/">http://altair.sci.hokudai.ac.jp/g3/</a>
	Professor Associate Professor Specially Appointed Assistant Professor	Tokiyoshi Ayabe Kiminori Nakamura Naoya Sakuragi	mucosal immunity, innate immunity, Paneth cell, antimicrobial peptide, $\alpha$ -defensin, dysbiosis, microbiota, ulcerative colitis, Crohn's disease, lifestyle disease <a href="http://altair.sci.hokudai.ac.jp/infsig/">http://altair.sci.hokudai.ac.jp/infsig/</a>
	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 <a href="http://altair.sci.hokudai.ac.jp/infmcd/">http://altair.sci.hokudai.ac.jp/infmcd/</a>
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 <a href="http://altair.sci.hokudai.ac.jp/g4/">http://altair.sci.hokudai.ac.jp/g4/</a>
	Professor	Toshiaki Koda	disease model mice, poly-glutamine disease, Huntington's disease, embryonic engineering <a href="http://altair.sci.hokudai.ac.jp/infemb/index.html">http://altair.sci.hokudai.ac.jp/infemb/index.html</a>
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 <a href="http://pel.es.hokudai.ac.jp/">http://pel.es.hokudai.ac.jp/</a>
	Specially Appointed Assistant Professor	Ryota Uehara	cell division, cytoskeleton, motor proteins, mitotic spindle, contractile ring, self-organization, phenotypic plasticity, live cell imaging, cell manipulation <a href="http://tenure-track.cris.hokudai.ac.jp/lab/uehara/">http://tenure-track.cris.hokudai.ac.jp/lab/uehara/</a>
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 <a href="http://altair.sci.hokudai.ac.jp/g_renkei/top.html">http://altair.sci.hokudai.ac.jp/g_renkei/top.html</a> <a href="https://unit.aist.go.jp/bpri/bpri-bimo/research_kakusan.html">https://unit.aist.go.jp/bpri/bpri-bimo/research_kakusan.html</a>

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Laboratory	Supervisors		Research Topics
Functional Genome Science	Professor Assistant Professor	Atsushi Kato Hidetaka Ito	gene expression, genome evolution, non-coding RNAs, retrotransposon, heat stress, epigenetic effects, plants, arabidopsis <a href="http://www.sci.hokudai.ac.jp/grp/keitai/sci.hokudai/KeitaiIII_mail.htm">http://www.sci.hokudai.ac.jp/grp/keitai/sci.hokudai/KeitaiIII_mail.htm</a>
	Associate Professor Assistant Professor	Shigeharu Takiya Ikuya Yoshida	Hox genes, transcriptional regulation, silkworm, ecdysis, insect hormone, X chromosome inactivation, reprogramming, stem cell <a href="http://www.sci.hokudai.ac.jp/bio/teacher/t-0370.php">http://www.sci.hokudai.ac.jp/bio/teacher/t-0370.php</a> , <a href="http://www.sci.hokudai.ac.jp/bio/teacher/t-0400.php">http://www.sci.hokudai.ac.jp/bio/teacher/t-0400.php</a>
	Associate Professor	Kazuhiro Kitada	model animals, human diseases, genome modification, gene function, mouse, rat <a href="https://sites.google.com/site/kitadalab/">https://sites.google.com/site/kitadalab/</a>
	Professor	Sanae M. M. Iguchi-Arigo	protooncogene, mutagen, oxidative stress, cancer, neurodegenerative disease, cellular and molecular biology, proliferation, transformation, apoptosis <a href="http://www.agr.hokudai.ac.jp/emolb/index.html">http://www.agr.hokudai.ac.jp/emolb/index.html</a>
Higher Order Cellular Functions	Professor Assistant Professor Assistant Professor	Kazuma Tanaka Tetsuo Mioka Takuma Kishimoto	cell polarity, phospholipid asymmetry, membrane traffic, flippase, yeast <a href="http://www.igm.hokudai.ac.jp/molint/index.html">http://www.igm.hokudai.ac.jp/molint/index.html</a>
	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 <a href="http://www.sci.hokudai.ac.jp/PlantSUGOIne/">http://www.sci.hokudai.ac.jp/PlantSUGOIne/</a>
	Associate Professor	Masaaki Watahiki	auxin, feedback gene regulation, live imaging, plant morphogenesis <a href="http://www.sci.hokudai.ac.jp/watahiki/mkwHP/index.html">http://www.sci.hokudai.ac.jp/watahiki/mkwHP/index.html</a>
	Associate Professor	Kei Sonoyama	gut physiology, prebiotics, probiotics, gut microbiota, allergy, metabolic syndrome, hibernation <a href="http://www.agr.hokudai.ac.jp/fbc/sonoyama/">http://www.agr.hokudai.ac.jp/fbc/sonoyama/</a>
	Associate Professor Assistant Professor	Kyoko Miura Yoshimi Kawamura	Naked mole-rat, cancer, longevity, aging, senescence, eusociality <a href="http://www.igm.hokudai.ac.jp/debanezumi/">http://www.igm.hokudai.ac.jp/debanezumi/</a>

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Environmental Life Science	Professor Assistant Professor	Junji Yamaguchi Takeo Sato	environmental adaptation, ubiquitin-proteasome system, nutrient metabolism, signal transduction, nutrient stress, plant immunity, proteomics <a href="http://www.sci.hokudai.ac.jp/CSF2-web/">http://www.sci.hokudai.ac.jp/CSF2-web/</a>
	Associate Professor	Yukako Chiba	mRNA stability, stress response, arabidopsis <a href="https://www.sci.hokudai.ac.jp/~yukako/">https://www.sci.hokudai.ac.jp/~yukako/</a>
	Associate Professor	Yasuhiro Takada	psychrophilic bacteria, cold-adapted enzymes, enzyme activity at low temperatures, cold-induced gene expression, regulation of gene expression <a href="http://www.sci.hokudai.ac.jp/~ytaka/takada.html">http://www.sci.hokudai.ac.jp/~ytaka/takada.html</a>
	Professor	Satoshi Naito	arabidopsis thaliana, translation arrest, mRNA degradation, methionine biosynthesis <a href="http://www.agr.hokudai.ac.jp/arabi/">http://www.agr.hokudai.ac.jp/arabi/</a>
	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 <a href="http://www.lowtem.hokudai.ac.jp/plantadapt/ayumi/">http://www.lowtem.hokudai.ac.jp/plantadapt/ayumi/</a>
Animal Behavior and System Control	Professor	Toshiya Matsushima	neuroethology, impulsiveness, risk sensitivity, chicks, tits, striatum, nucleus accumbens, decision making, imprinting <a href="http://www.sci.hokudai.ac.jp/~matusima/chinou3/Welcome.html">http://www.sci.hokudai.ac.jp/~matusima/chinou3/Welcome.html</a>
	Professor Specially Appointed Assistant Professor	Makoto Mizunami Nobuaki Tanaka	learning, olfaction, memory, insect, microbrain, neuroethology, physiology, genetics <a href="https://www.sci.hokudai.ac.jp/~mizunami/MICROB~2/">https://www.sci.hokudai.ac.jp/~mizunami/MICROB~2/</a> <a href="http://www.cris.hokudai.ac.jp/tanaka/Lab/index.html">http://www.cris.hokudai.ac.jp/tanaka/Lab/index.html</a>
	Professor	Hiroto Ogawa	brain, neuroscience, electrophysiology, imaging, information processing, neural circuit, coding, sensorimotor integration, insect <a href="http://www.sci.hokudai.ac.jp/~hogawa/index.html">http://www.sci.hokudai.ac.jp/~hogawa/index.html</a>

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Animal Behavior and System Control	Associate Professor	Kazuhiro Wada	vocal learning, critical period, epigenetics, neural activated gene, songbird, neuroethology, genome, behaviour, DNA methylation, stuttering <a href="http://www.wada-lab.org/">http://www.wada-lab.org/</a>
	Associate Professor	Masayo Soma	behavior, cognition, communication, bird song, learning, life history <a href="http://www.lfsci.hokudai.ac.jp/search/system/soma.html">http://www.lfsci.hokudai.ac.jp/search/system/soma.html</a>
	Associate Professor Assistant Professor	Hitoshi Aonuma Hiroshi Nishino	Synthetic neuroethology, neurobiology, electrophysiology, neurorobotics, roboticbiology, neurogenetics, neuromodulation, social behavior, aggression, insect <a href="http://ncmac2.es.hokudai.ac.jp/index.html">http://ncmac2.es.hokudai.ac.jp/index.html</a>
Reproductive and Developmental Sciences	Professor	Masakane Yamashita	oocyte maturation, spermatogenesis, meiosis, translational control, transgenic fish <a href="http://www.sci.hokudai.ac.jp/~myama/seitai1/Welcome.html">http://www.sci.hokudai.ac.jp/~myama/seitai1/Welcome.html</a>
	Professor	Yoshinao Katsu	endocrinology, steroid hormone, nuclear receptor, sex-determination, evolution, endocrine disruptor <a href="http://www.repdev-katsu.jp/index.html">http://www.repdev-katsu.jp/index.html</a>
	Professor	Asato Kuroiwa	sex determination, sex chromosome, evolution, spiny rat, chicken <a href="https://sites.google.com/site/kuroiwagroup/home">https://sites.google.com/site/kuroiwagroup/home</a>
	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 <a href="https://www.sci.hokudai.ac.jp/~akimura/Molecular/Welcome.APK.html">https://www.sci.hokudai.ac.jp/~akimura/Molecular/Welcome.APK.html</a>
	Associate Professor	Katsueki Ogiwara	ovary, ovulation, follicle selection, endocrine regulation, mouse, zebrafish, medaka <a href="https://www.sci.hokudai.ac.jp/~kogi/Reproductive2/Welcome.html">https://www.sci.hokudai.ac.jp/~kogi/Reproductive2/Welcome.html</a>