

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 Associate Professor Assistant Professor Specially Appointed Assistant Professor	Min Yao Toyoyuki Ose Koji Kato Jian Yu	structural biology, protein crystallography, protein science, biophysics, nucleic acid, translation, pathogenic bacteria, SBDD http://altair.sci.hokudai.ac.jp/g6/
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	Kazushige Kawabata	cell mechanics, mechanosensing, collective cell migration, cancer invasion, anisotropic gel, self-organization, diffusion, polymer physics, biomechanics 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/infmcd/

Transdisciplinary Life Science Course, Division of Life Science

Laboratory	Supervisors		Research Topics
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
	Associate 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, 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, 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	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	<i>Arabidopsis thaliana</i> , translation arrest, mRNA degradation, methionine biosynthesis http://www.agr.hokudai.ac.jp/arabi/
	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 http://www.sci.hokudai.ac.jp/~hogawa/index.html
	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, neurorobotics, roboticbiology, neurogenetics, neuromodulation, social behavior, aggression, insect http://ncmac2.es.hokudai.ac.jp/index.html
	Associate Professor	Nobuaki Tanaka	sensory processing, neuroendocrine system, Drosophila genetics, pygmy squid http://www.cris.hokudai.ac.jp/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 http://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

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	<p>Our laboratory deals with soft matter "gel". In addition to soft and large deformation, we aim to create polymer gels with superior functions as like living body, especially mechanical function, elucidate the principle of its function expression, and apply gel to biological substitute soft tissues such as cartilage. We also aim to extend the results of these gel studies to other soft matter materials and apply them to industrial materials. Typical research topics are 1) design and creation of high strength · high toughness gels and elastomers, 2) elucidation of dynamics and fracture mechanism of soft matter, 3) creation of low friction gels, clarification of friction and lubrication mechanism of gels, 4) creation of high-toughness soft composite materials and clarification of fracture mechanism, 4) gel mechanochemistry, 5) biomineralization and soft ceramics, 6) biomaterials and artificial cartilages.</p> <p>URL: http://altair.sci.hokudai.ac.jp/g2/index_e.html</p>
	Assistant Professor Assistant Professor	Tasuku Nakajima Daniel R King	
	Specially Appointed Assistant Professor	Takayuki Nonoyama	
	Professor	Kuniharu Ijiro	<p>development of DNA-based nanodevices, creation of biotemplated nanoarchitecture for bioapplications, controlled self-assembly of metal nanoparticles for photonics applications, dynamic structure control using soft matters such as hydrogel</p> <p>URL: http://chem.es.hokudai.ac.jp/en/</p>
	Associate Professor	Hideyuki Mitomo	
Biomolecular Soft Matter	Professor	Makoto Demura	<p>Biodesign of protein function and its structural basis to soft materials.</p> <ul style="list-style-type: none"> - Innovative approach to biomimicry, biodesign and bio-inspired materials based on fundamental sciences. - NMR metabolomics, protein science, structural biology, antimicrobial peptide, genetic engineering. - Molecular mechanism of light-harvesting proteins and its application to active soft matter. <p>URL: http://altair.sci.hokudai.ac.jp/infana/</p>
	Lecturer	Takashi Kikukawa	
	Assistant Professor	Takashi Tsukamoto	
	Associate Professor	Tomoyasu Aizawa	<p>protein engineering, structural biology, protein, peptide, NMR metabolomics</p> <p>URL: http://altair.sci.hokudai.ac.jp/g5/</p>
Soft Matter Biophysics	Professor	Hisashi Haga	<p>collective cell migration, 3D morphogenesis, cancer invasion, collagen gel, matrigel, anisotropic gel, molecular cell biology, mechanobiology, biomechanics, polymer physics</p> <p>URL: http://altair.sci.hokudai.ac.jp/g3/</p>
	Assistant Professor Assistant Professor	Kazuya Furusawa Seiichiro Ishihara	
	Professor	Toshiyuki Nakagaki	<p>soft matter physics, active soft mater, cell movement, biomechanics, ethology, behavioral intelligence, contractile protein, rheology, amoeboid movement, ciliary motion, nematoda, peristaltic locomotion, development, morphogenesis, transport network, model simulation, mathematical modeling, slime mold, ciliate, flagellate</p> <p>URL: http://pel.es.hokudai.ac.jp/</p>
	Associate Professor	Katsuhiko Sato	
	Assistant Professor	Shigeru Kuroda	

Division of Soft Matter, Graduate School of Life Science

Laboratory	Supervisors		Research Topics
Soft Matter Medical Science	Associate Professor	Masumi Tsuda	biomaterial, artificial cartilage, cancer stem cell, molecular targeted therapy, regenerative medicine, neuroregeneration URL: http://patho2.med.hokudai.ac.jp
	Lecturer	Tomohiro Onodera	Orthopaedic Surgery, Tissue Engineering, Cartilage Biology, Glycobiology, Clinical application, Arginate Gel, Human Clinical Trial. URL: http://www.hokudaiseikei.jp/