

Faculty and Research Guide of the Graduate School of Natural Science and Technology, Gifu University

【Department of Life Science and Chemistry】

Molecular Life Science Division

Name	Research Field	Research Topics
Professor ANDO, Hiromune	Carbohydrate- Oriented Life Science	Chemical Syntheses of Natural Glycoconjugates Creation of Versatile Carbohydrate Probes
Professor ISHIDA, Hideharu	Bioactive Materials Science	Chemical biology on bioactive glycoconjugates Chemical biology on bioactive lipids
Associate Professor IMAMURA, Akihiro	Applied Carbohydrate Chemistry	Chemical Syntheses of Biologically-relevant Glycans Development of Novel Glycosylation Methods
Professor IWAHASHI, Hitoshi	Applied Microbiology	OMICS studies on environmental stress Studies on microbial control using environmental stress
Associate Professor IWAMA, Tomonori	Microbial Biochemistry	Structure and function of bacterial chemoreceptor
Professor UENO, Yoshihito	Nucleic Acid Chemistry	Design and chemical synthesis of functional nucleic acids for gene therapy and genetic diagnosis
Professor EBIHARA, Akio	Enzyme Science	Structural and Molecular Biology of Renin-angiotensin System Protein Structure-function Relationships
Assistant Professor SHIMADA, Atsuhiko	Enzyme Science	Structure-based understanding the chemical reaction mechanism driven by enzymes
Professor SUZUKI, Tohru	Genome Microbiology	A new aspect of microbiology using genome science and bio-informatics
Associate Professor TERAMOTO, Yoshikuni	Chemistry of Biomass-based Materials	Structural designing and functionalization of cellulose and related polysaccharide derivatives and their hyperfine composites Material functionalization of wood components
Professor NAKAGAWA, Tsutomu	Molecular Cellular Biology	Molecular biology of the renin-angiotensin system
Associate Professor NAKAMURA, Kohei	Molecular Microbial Ecology	Syntrophic methanogenesis Prokaryotic diversity on anaerobic metabolism in carbon cycle
Professor ITSUNAGA, Tohru	Natural Products Chemistry	Bioactivity of plant polyphenols Anti-obesity effects of terpenoids contained in a higher plant Physiological activity of hydrolysable and condensed tannins against microorganisms
Associate Professor YANASE, Emiko	Bio-organic Chemistry	Isolation, structure determination and synthesis of Natural products
Assistant Professor YAMAUCHI, Kosei	Natural Products Chemistry	Isolation and identification of ingredients from natural products Investigation of physiological activity of ingredients in animal cells

Life Science for Food Division

Name	Research Field	Research Topics
Professor ARAHATA, Katsumi	Food Economics	Political Economy of Food and Agricultural Policies in Japan: Public Choice Approach Comparative Studies on Behaviors of Interest Groups and Bureaucrats among U.S., European and Japanese Agricultural Policy Decision-making Economic Analyses of the Rice Set-aside Program in Japan
Assistant Professor INAGAKI, Mizuho	Food Material Chemistry	Biochemistry and Molecular Biology on cellular responses and functions using the food components, Research on food components and gut microbiota
Professor IWAMOTO, Satoshi	Food Engineering	Encapsulation of antioxidative compounds for making fine food and/or medicals by emulsification Application of self-assembly of natural amphiphilic substance to create functional interface Sol-gel and/or grass transition of food materials
Assistant Professor KATSUNO, Nakako	Food Processing Chemistry	Study of dispersion stability of particles in nonaqueous food slurry
Assistant Professor KITAGUCHI, Kohji	Functional Food Biochemistry	Molecular and cellular studies on the interaction between immune cells and food components Studies on inhibitory effect of food on allergic diseases
Associate Professor SHIMADA, Masaya	Molecular Nutrition	Regulation of metabolic diseases (fatty liver, diabetes, hypertension etc.) by nutrients and food components
Assistant Professor THAMMAWONG , Manasikan	Postharvest Physiology	Understanding of Quality Change Mechanisms and Development of the Novel Postharvest Technology for Fresh Produces
Professor NAKAGAWA, Tomoyuki	Molecular Function of Food	Molecular cell biology of yeasts Molecular breeding of yeasts Development of industrial enzymes
Professor NAGAOKA, Satoshi	Molecular Function of Food	Studies on the functional and nutraceutical food components in health promotion and life-style related disease (eg. hypercholesterolemia, hyperlipidemia, obesity) prevention. Studies on the novel signalling pathway related to the expression of food function by functional and nutraceutical food components, and the development of new fundamental strategies for the development of functional food.
Professor NAKANO, Kohei	Postharvest Engineering	Postharvest Physiology and Technology of Fresh Agricultural produces
Professor NISHIZU, Takahisa	Food Process Engineering	Studies on physical properties of food Development of food process monitoring technique Studies on food freezing
Professor HAYAKAWA, Takashi	Food and Nutritional Biochemistry	Dietary fiber research for health promotion Research on some water soluble vitamins Functional water research for health benefit
Professor MAEZAWA, Shigenori	Food Logistics Science	Studies on the Food Distribution Science Analysis for Food Distribution Mechanism through Wholesale Market Optimization of Distribution System of Fresh Food
Professor YABE, Tomio	Food Chemistry and Biochemistry	Glycobiological studies on function control through proteoglycans. Structural analysis of a dietary fiber in food and studies on physiology.

【Department of Agricultural and Environmental Science】

Plant Production Division

Name	Research Field	Research Topics
Professor OBA, Shinya	Plant Production control	Study on the genetical and the physiological properties of field crop plants such as rice, soybean, buckwheat etc. Study on the plant production systems and the field control based on low input agriculture from soil science and ecological aspects
Assistant Professor OCHIAI, Masaki	Horticultural Biotechnology and Bioengineering	Molecular and biological properties of horticultural plants under environmental control. Breeding of horticultural varieties suitable for protected cultivation.
Professor KAGEYAMA, Koji	Vegetation Ecology	Environment Assessment Using Soil Microorganisms Molecular Ecology of Soil Microorganisms Molecular Diagnosis of Plant Pathogens
Associate Professor KAJIKAWA, Chikako	Food Economics	Econometric Research on Supply-Demand Structure of Agricultural Products and Structure of the Food Industry
Associate Professor KOBAYASHI, Yuriko	Molecular Plant Nutrition	Genetics and Molecular Biology of Plant Mineral Nutrition and Environmental Stress Tolerance Mechanisms in Plant using Genetic Diversity
Professor KOYAMA, Hiroyuki	Plant Cell Technology	Molecular Physiology in the plant responses to aluminum toxicity and Pi deficiency Plant molecular breeding to improve growth performance in the acid soil Applied genomics approaches for "gene-fishing" that can utilize plant breeding
Associate Professor SHIMAZU, Teruaki	Environmental Control Engineering	<ul style="list-style-type: none"> •Development of environmental control on plant production systems •Analysis of greenhouse microclimate •Analysis of the environmental response of plant physiological process
Associate Professor SHIMIZU, Masafumi	Plant Pathology	Biological control of plant diseases Analysis of tri-trophic interactions among plants, pathogens and plant probiotics
Associate Professor SUGA, Haruhisa	Molecular Plant Pathology	Molecular Ecology of Plant Pathogens Producing Mycotxins Pathogenicity Mechanisms of Plant Pathogens Genome Evolution of Plant Pathogens
Associate Professor MATSUBARA, Yoichi	Horticultural Plant Production	Bioregulation of environmental stress tolerance in horticultural plants Antioxidative ability in horticultural plants Herb plants with antifungal and antioxidative ability
Associate Professor YAMANE, Kyoko	Genetics and Plant Breeding	Origin, Evolution, and Conservation of Wasabi Breeding of Buckwheat- Related Species. Molecular Cloning of Adaptation Characters in Triticum/ Aegilops Species, Wheat-Related Species.
Professor YAMAMOTO, Yoshiharu Y.	Plant Genome Science	Environmental Stresses and Photosynthesis Genome-wide Analysis of Plant Promoter Photosynthetic Sea Slug
Associate Professor LEE, Younmi	Agricultural Policy	The influence by which agricultural policy gives to agricultural structure

Animal Science Division

Name	Research Field	Research Topics
Associate Professor ASANO, Makoto	Zoo and Wildlife Medicine	Population analysis on Wild Mammals Population Control of Invasive Alien Mammals Reproductive Research on Wild Mammals
Professor IWASAWA, Atsushi	Comparative Biochemistry (Animal Physiological Chemistry)	Ontogeny of the pituitary-thyroid axis in chicken embryo Development of sensitive, non-radioisotopic immunoassays for avian pituitary hormones <u>Mechanism of avian glucose homeostasis</u>
Associate Professor KUSUDA, Satoshi	Zoo Animal Reproduction	Reproductive physiology in zoo and wild animals Development of non-invasive endocrine monitoring techniques for endangered animals
Professor SUZUKI, Masatsugu	Wildlife Biology	Reproductive Biology of Wildlife Management Techniques of Wildlife Wildlife Diseases
Associate Professor TADANO, Ryo	Animal Genome Diversity	Study on genetic diversity of livestock and poultry
Professor DOI, Osamu	Animal Reproduction	Reproductive Physiology of Endangered Animals
Associate Professor NINOMIYA, Shigeru	Animal Welfare & Behaviour	Animal management and welfare Investigation of mechanism of animal behaviour
Assistant Professor HIMAKI, Takehiro	Animal Biotechnology	Artificial controls of the generative cells Development of the techniques to produce the high valuable animals
Professor MATSUMURA, Shuichi	Animal Genetics	Reconstruction of evolutionary/population history from genetic data Relationships between genetics and behavior
Professor YAMAMOTO, Akemi	Animal Nutrition	Response of poultry to energy and amino acids Estimation of digestibility for pigs and poultry
Associate Professor YAMAMOTO, Kenya	Animal development Animal reproduction	Early developmental processes in echinoderms
Professor YAYOTA, Masato	Animal Feeding and Nutrition	Nutritional ecology of grazing ruminants on semi-natural grasslands Digestive physiology of grazing ruminants

Environmental Science and Ecology Division

Name	Research Field	Research Topics
Associate Professor ANDO, Masaki	Wildlife Ecology and Management	Interactions between Food Habit of Wildlife and Forest Ecosystem Wildlife Ecology and Management <u>Resolving Conflicts between Wildlife and Human</u>
Professor AWAYA, Yoshio	Forest management and remote sensing of vegetation	Vegetation mapping (type, biomass, production) Forest ecosystem management (zoning of management type) <u>Forest resource planning</u>
Professor HIRAMATSU, Ken	Water Resources and Environmental Engineering	Ecological and environmental hydraulics Conservation of aquatic ecology and environment in a rural area <u>Water resources management</u>
Assistant Professor HIROTA, Isao	Regional Resource Ecology	Regional plant utilization and management in Southeast Asia and Japan Agricultural system and ecology in Southeast Asia and Japan.
Associate Professor ISHIDA, Megumi	Forest Management	Management of artificial and natural forests(regeneration, silviculture, conservation) <u>Forest construction and its environments(biomass, 3D architecture, climates)</u>
Associate Professor ITO, Kengo	Aquatic Biology and Environmental Science	Conservation of Aqua Biological Ecology Irrigation and Drainage <u>Analysis of Plants Sap Flow</u>
Assistant Professor KATAHATA, Shin-ichiro	Tree Ecophysiology	Environmental Response of Tree <u>Flowering Mechanism of Tree</u>
Associate Professor KATO, Shogo	Forest Ecology	Spatial pattern and process in woody plants (Hemiparasitic plant, understory plant, Liana and Japanese fir) <u>Positive and negative phototropism of root climber</u>
Professor KAWAKUBO, Nobumitsu	Biodiversity Conservation	Plant Taxonomy Evolutionary Ecology <u>Biodiversity Conservation</u>
Associate Professor MUKAI, Takahiko	Biogeography	Research on the diversity of aquatic animals, and on their conservation.
Professor MUKAI, Yuzuru	Forest Molecular Ecology	Analysis of the factors affecting genetic structure and gene flow in natural tree populations Genetic diversity at the loci relating to self-incompatibility and/or inbreeding depression in tree species <u>Eco-physiological studies on the photoprotection in woody plants</u>
Professor MURAOKA, Hiroyuki	Plant and ecosystem physiological ecology	Light acquisition and utilization of vascular plants Plant growth and light environment in forest ecosystems <u>Eco-physiological process in terrestrial ecosystem carbon cycle</u>
Associate Professor NISHIMURA, Naomasa	Environmental Engineering for Land Resource	Water movement and mass transport through soil <u>Environmental improvement of water quality in agricultural region</u>
Professor NISHIMURA, Shin-ichi	Agricultural Structures and Environment Engineering	<u>Safety and effective use of agricultural structures for water supply</u>
Associate Professor NISHIYAMA, Tatsuro	Mechanics for Agricultural Dams	<u>Estimation of strength of rock foundations for dam safety</u>
Assistant Professor NODA, Keigo	Water Resources and Environment Design	Watershed hydrology and material dynamics focused on agricultural activities in Monsoon Asia and Asia Pacific Islands.
Professor OHTSUKA, Toshiyuki	Ecosystem ecology	Carbon sequestration in forest ecosystems Community structure and ecosystem function <u>Dynamics of detritus pools in forest ecosystems</u>
Assistant Professor, OKAMOTO, Tomoko	Chemical Ecology	Insect pheromone Research Role of plant volatiles in plant-animal interaction <u>Speciation mechanisms</u>
Associate Professor ONISHI, Takeo	Hydrology	Dissolved iron production and transport mechanism in natural environment Comparison of hydrological characteristics of deciduous forest and coniferous forests <u>Anthropogenic impacts on hydrological cycle in terrestrial area in the Ili River</u>

Assistant Professor SAITOH, Taku	Environmental biophysics	Study on carbon, water and heat cycles in terrestrial ecosystems based on field measurements and ecosystem modelling
Professor SENGE, Masateru	Aquatic Biology and Environmental Science	Conservation of Aqua Biological Ecology Irrigation and Drainage Analysis of Plants Sap Flow
Professor TSUCHIDA, Koji	Insect Ecology	Colony and population structures of social insects Genetic population structures of insects in the wild
Associate Professor TSUDA, Satoshi	Management of Resources and Environment	Field: fire ecology, vegetation science, plant ecology or botany Material: burn sites following forest fire, secondary grasslands maintained by burning, slash and burn agricultural fields, etc. Interest: vegetation recovery, seedling emergence, soil seedbank, disturbance
Associate Professor Wei Yongfen	Environmental monitoring	Monitoring and assessment of Nitrogen, Carbon and environmental pollutants in natural environment (forest, agricultural land and water systems)