

รายชื่อหัวข้อการวิจัยของ Graduate School of Bioagricultural Sciences
มหาวิทยาลัย Nagoya ประเทศญี่ปุ่น

ด้วย มหาวิทยาลัย Nagoya ประเทศญี่ปุ่น ได้ประสานความร่วมมือกับ บัณฑิตวิทยาลัย
มหาวิทยาลัยเกษตรศาสตร์ ในการรับนิสิตเข้าศึกษาต่อในโครงการ Joint Degree Program
ระดับปริญญาเอก สาขาวิชาวิทยาศาสตร์เกษตร ทั้งนี้ มหาวิทยาลัย Nagoya ได้ส่งรายชื่อหัวข้อการวิจัยของ
Graduate School of Bioagricultural Sciences ใน 4 สาขา ได้แก่

1. Forest and Environmental Resources Sciences
2. Plant Production Sciences
3. Animal Sciences
4. Applied Biosciences

ผู้ที่สนใจสมัครเข้าศึกษาต่อ สามารถตรวจสอบหัวข้อการวิจัยของ Graduate School of Bioagricultural
Sciences ตามเอกสารที่แนบมาพร้อมนี้ สอบถามข้อมูลเพิ่มเติมได้ที่

คณะเกษตรกำแพงแสน

มหาวิทยาลัยเกษตรศาสตร์ วิทยาเขตกำแพงแสน

โทร 6634-281082, 6634-351406 ext. 130

จดหมายอิเล็กทรอนิกส์: agr_eduser@ku.ac.th

Laboratories, Areas of Research, and Staff

Graduate School of Bioagricultural Sciences, Nagoya University

Department	Laboratory	Area of Research	Research Key Words	Staff			
				Professor	Associate Professor	Lecturer	Assistant Professor
1. Forest and Environmental Resources Sciences	1. Resources Cycling in Pedosphere	Cycles of carbon, nitrogen, and trace elements in pedosphere and related environments. Chemical structure, function, and dynamics of soil organic matter, in particular humic substances.	Soil organic matter, humic substances, black carbon, greenhouse gas, dissolved organic matter	WATANABE, Akira			
	2. Forest Environment and Resources	Studies on regulatory mechanism of material cycling in forest based on environmental chemistry and plant physiology, and application to environmental problem.	trees, trace elements, stress, phytoremediation, nutrient dynamics	TAKENAKA, Chisato (Scheduled to retire in March 2021)			
	3. Forest Hydrology and Disaster Mitigation Science	We aim to propose future of human-nature interaction, which has multi-layered and -meaning characteristics, from local to global scale, through investigating water cycle dynamics in various land cover including forest and vulnerability to disaster in community.	Water, energy and material cycles, Terrestrial biosphere-atmosphere interaction, Debris flow, Sediment yield		TANAKA, Takafumi		KOTANI, Ayumi
	4. Forest Ecology	Our laboratory covers a wide range of studies related to forest ecology, forest genetics, and forest ecophysiology. Especially structure, dynamics and functions in forest communities. Also genetic variation, reproduction, ecophysiology, dry matter production and balance as well as theoretical modeling in tree populations.	Forest ecology, Population genetics, Ecophysiology, Conservation, Tropic forest	TOMARU, Nobuhiro	NAKAGAWA, Michiko	OGAWA, Kazuharu	
	5. Forest Protection	Forest entomology focusing on insect-fungus and insect-plant interactions. Forest ecosystem conservation based on the management of biological communities.	Forest insects, Interactions among organisms, Forest pests, Arthropod communities, Forest microbes, Symbiosis	HIJII, Naoki (Scheduled to retire in March 2022)	KAJIMURA, Hisashi		TOKI, Wataru
	6. Forest Resource Management	Research on development of cutting edge measurement technology of forest, construction of theory concerning forest resource management, development of future planning and evaluation method of forest management.	Remote Sensing, GIS, Forest planning, Forest measurement, LiDAR	YAMAMOTO, Kazukiyo			
	7. Forest Resources and Society	Studies on forest management policy for realizing both forest conservation and improvement of local livelihoods, forest certification, participatory forest management and community forestry	Forest policy, National park, Community forestry, Ecotourism, Forest resource use	HARADA, Kazuhiro			
	8. Plant-Soil Systems	Studies on nutrient dynamics in forest ecosystems. Our specific focus is to evaluate forest health by disentangling tripartite interactions among plant, soil, and microbes.	biogeochemistry, coastal forests, forest soil science, Ground penetrating radar, plantation forests		TANIKAWA, Toko		
	9. Forest Chemistry	Studies on biochemistry of lignification, chemistry of wood extractives, chemistry of lignin, preparation of functional materials from lignin, pulp and paper science, and cellulose chemistry.	lignin, biomass, cell wall, wood chemistry, TOF-SIMS	FUKUSHIMA, Kazuhiko	MATSUSHITA, Yasuyuki	AOKI, Dan	
	10. Biomass Resource Utilization	Isolation and structural elucidation, biosynthesis, distribution and utilization of wood extractives.	Wood extractives, Isolation and structural elucidation, Biosynthesis, Visualization, Chemical analysis		IMAI, Takanori		
	11. Wood Physics	Generation processes of growth stress and wood properties during tree growth, Growth and maturation of tropical plantation species, Analysis of reaction wood formation by molecular approach, Physical and mechanical properties of wood materials.	Cell wall, cellulose, secondary growth, growth stress, plantation resources	YAMAMOTO, Hiroyuki	YOSHIDA, Masato	MATSUO, Miyuki	
	12. Timber Engineering	Mechanical durability in structural use of wood and wood-based materials, Analysis of mechanical behavior in timber structure, Quality of material distribution and the plan for demand and supply of forest resources, Wood utilization in urban design.	Timber engineering, Strength, Failure and fatigue, Wood utilization, Wood urbanism		YAMASAKI, Mariko		ANDO, Kosei
	13. System Engineering for Biology	Studies on measurement system and precise mechanical process for biological resources.	Nondestructive measurement, Spectroscopy, Imaging Analysis, Mechanical Engineering	TSUCHIKAWA, Satoru		INAGAKI, Tetsuya	

Laboratories, Areas of Research, and Staff

Graduate School of Bioagricultural Sciences, Nagoya University

Department	Laboratory	Area of Research	Research Key Words	Staff			
				Professor	Associate Professor	Lecturer	Assistant Professor
2. Plant Production Sciences	14. Plant Physiology and Morphology	Studies from both aspects of structure and function on functional differentiation of plant cells and tissues, and response to environmental stresses.	C4 plant, Chloroplast, Electron microscope, Environmental stress, Ultrastructure	TANIGUCHI, Mitsutaka			OI, Takao
	15. Plant Genetics and Breeding	Genetical and developmental research by biotechnological analyses with respect to evolution, morphogenesis, gene expression, and functional development of plant cultivated species.	Crop plants (rice, maize, wheat and soybean), Abiotic stress tolerance, Flooding, Root, Molecular genetics	NAKAZONO, Mikio	TAKAHASHI, Hirokazu		
	16. Crop Science	Physiological and ecological studies on crop production: nutrient acquisition and growth response to environment.	Crop productivity, Environmental stress, Nutrient acquisition, Sink-source relationship, Symbiosis	KONDO, Motohiko	YANO, Katsuya		SUGIURA, Daisuke
	17. Crop Stress Regulation	Physiological and molecular mechanism of crop stress tolerance	Abiotic stress, Crop Science, QTL, Root, Yield	YAMAUCHI, Akira (Scheduled to retire in March 2022)		MITSUYA, Shiro	
	18. Horticultural Science	Physiological, biochemical and molecular biological approach to the mechanism of flower formation, flower opening and fruit set, growth of horticultural crops to improve their productivity.	Horticultural crops, Genome editing, Molecular breeding, Epigenetics, Omics study	MATSUMOTO, Shogo	SHIRATAKE, Katsuhiko	OTAGAKI, Shungo	
	19. Plant Pathology	Physiological, biochemical and molecular-biological researches on defense mechanisms of plants against plant pathogens, and interactions of plant pathogens and beneficial environmental microorganisms with host plants. Development of biocontrol measures and understanding of its mechanisms.	Plant disease resistance, Elicitor, Plant-associated microbes, Plant and Fungal viruses, Biological control		TAKEMOTO, Daigo CHIBA, Soutaro		SATO, Ikuo
	20. Plant Immunology	Studies on the molecular mechanisms of plant immune response in plant-pathogen interactions.	NADPH oxidase, ROS burst, MAP kinase, Plant immunity, Plant pathology		YOSHIOKA, Hirofumi		
	Information Sciences 21. in Agricultural Lands	Studies to improve agricultural production by analyzing information from field (crop DNA sequences, morphology, physiological characteristics, yield, soil, environment, etc.) by means of informatics/ data science	Agricultural informatics, Soil and rhizosphere microbiome, Genetic diversity, Breeding, Field informatics	MURASE, Jun	DOI, Kazuyuki		NISHIUCHI, Shunsaku
	22. Food Economics	Socioeconomic studies on food system, regional resource management and multifunctional roles of agriculture.	Agricultural Economics, Farm Management, Rural Resource Management Food System	TOKUDA, Hiromi	TAKESHITA, Hironobu		MIURA, Satoshi
	23. Plant Gene Function	Studies on plant gene function and its application.	Rice, Stem elongation, Water tolerance, Molecular breeding	ASHIKARI, Motoyuki			NAGAI, Keisuke
	24. Agrigenome	Studies on genomic information for development of useful traits of rice and creation of novel plant regulators.	Rice, QTL, GWAS, GA, Structural biology	MATSUOKA, Makoto (Scheduled to retire in March 2021)	UEGUCHI, Miyako		
	25. Plant Genomics and Breeding	Study on plant genomics and breeding to solve various problems of modern society, i.e. environment, energy, food problems, etc.	sorghum, energy crop, QTL, GWAS, heterosis	SAZUKA, Takashi			
	26. Bioindustry	Studies on plant grafting and systemic signaling in plants to improve plant resources for future sustainability.	Grafting, long distance signaling in plants, micro devices for plant science		NOTAGUCHI, Michitaka	KUROTANI, Kenichi**	
	27. Tropical Bioresources	Screening of tropical plant resources and their utilization for environmentally friendly agriculture responding to diversification of food demand and climate change.	Crops (Sago palm, Rice, Cowpea), Cultivation technique, Environmental stress,	EHARA, Hiroshi			NAKATA, Mana
	28. Genetic Information for Bioresources	Studies on genetic information for useful traits of bioresources to aim utilization and application of regional resources and sustainable development through environmental conservation.	Genetics, Breeding, Rice, Abiotic stress, Stress avoidance	INUKAI, Yoshiaki			
	29. Practical Studies in Africa	Development of sustainable and appropriate technology for agricultural and forestry production, acclimation and dissemination of new resources and technologies, and social implementation based on research results in Africa	Africa, Crop, Cultivation management, Practical study, Rice		MAKIHARA, Daigo		
	30. Practical Studies in Asia	Studies on agriculture and rural developmet including natural resources management in Asia for better livelihoods, poverty reduction and food security.	International Cooperation Official Development Assistance Agricultural and rural development		ITO, Kasumi		

Laboratories, Areas of Research, and Staff

Graduate School of Bioagricultural Sciences, Nagoya University

Department	Laboratory	Area of Research	Research Key Words	Staff			
				Professor	Associate Professor	Lecturer	Assistant Professor
3. Animal Sciences	31 Animal Genetics and Breeding	Studies on the genetic basis of qualitative and quantitative traits in mammals and birds; evaluation, conservation and utilization of animal genetic resources; and development of new laboratory animal models for human disease and biological functions.	qualitative (Mendelian) traits, quantitative traits, livestock resources, poultry, laboratory animal models		ISHIKAWA, Akira		YAMAGATA, Takahiro
	32 Genome and Epigenome Dynamics	Epigenetic regulatory systems for transposons and genes in vertebrates. Epigenome regulation during germ cell development. Genome-epigenome interactions during evolution.	Epigenetics, Germ Cells, iPS cells, Transposable elements, Transgenerational Inheritance, Diabetes	ICHIYANAGI Kenji			
	33 Animal Morphology	Morphological studies on nervous and reproductive tissues in mammals and birds.	morphology, molecular genetics, reproductive system, Vertebrates	HONDO, Eiichi			
	34 Animal Integrative Physiology	Understanding the regulatory mechanisms of circadian rhythms and photoperiodism in vertebrates. Development of transformative bio-molecules that improve animal production and human health. Studies on physiological regulation of gene expression and release of growth factors in birds.	Seasonal Rhythm, Circadian Rhythm, Growth Hormone, Comparative Biology, Chemical Biology	YOSHIMURA, Takashi	OHKAWA, Taeko	NAKANE, Yusuke**	TSUKADA, Akira NAKAYAMA, Tomoya***
	35 Animal Reproduction	Basic studies on the neuroendocrinological mechanism regulating animal reproduction and its application to animal production and drug discovery.	Gonadotropins, GnRH, Kisspeptin, Gonads, Brain, Neuroendocrinology	TSUKAMURA, Hiroko	UENOYAMA, Yoshihisa	INOUE, Naoko	
	36 Animal Nutrition	Analysis of the causative genes and nutritional factors for metabolic diseases (type 2 diabetes and fatty liver etc.) in mammalian and avian species. Analysis of the uptake mechanism of biomolecules into avian eggs and its application to production of valuable protein.	Nutritional factors, Animal disease model, Metabolic diseases, Fatty liver, Egg production	HORIO, Fumihiko (Scheduled to retire in March 2021)	MURAI, Atsushi	KOBAYASHI, Misato	
	37 Animal Production Science	Studies on regulatory mechanism of physiological functions in ruminants and its utilization for animal production.	Reproduction, GnRH, Uterine function, Ovarian activity, Heat stress	OHKURA, Satoshi	MATSUYAMA, Shuichi		MORITA, Yasuhiro***
	38 Avian Bioscience	Molecular mechanisms of the skeletal patterning and evolution of the vertebrate morphogenesis. Functional genomics-based identification of genes that control avian-specific life phenomenon. Production of avian model animals by genetic modification and use thereof.	Animal model, Genome, Chromosome, Quantitative trait loci (QTL), Genetic resource, Evolution		SUZUKI, Takayuki		
	39 Fish Biology	Morphological, physiological, and behavioral studies of the brain, sensory receptors, motor systems, and peptidergic neurons in aquatic animals.	fish, nervous system, sensorimotor circuit, peptidergic neurons, behavior	YAMAMOTO, Naoyuki	ABE, Hideki		GOTO, Maki
	40 Sericulture and Entomoresources	Molecular mechanisms of baculovirus infection, baculovirus-host interaction and antiviral responses in insects.	Insect pathology, Baculovirus infection, Antiviral response, Host range determination	IKEDA, Motoko			
41 Applied Entomology	Studies on the development of insect pest management methodology via physiological and molecular approaches.	insect function, pest management, insect immunity, insect hormone, entomopathogen		MIURA, Ken	MINAKUCHI, Chieka		

**Designated Lecturer

***Designated Assistant Professor

(as of April 1, 2020)

Laboratories, Areas of Research, and Staff

Graduate School of Bioagricultural Sciences, Nagoya University

Department	Laboratory	Area of Research	Research Key Words	Staff			
				Professor	Associate Professor	Lecturer	Assistant Professor
	42. Organic Chemistry	Bioorganic studies on naturally occurring organic molecules possessing novel structure and biological activity; development of new synthetic methodologies, total synthesis of natural products, elucidation and control of the biofunctions.	organic synthesis, natural products, chemical biology, molecular design	NISHIKAWA, Toshio	NAKAZAKI, Atsuo		
	43. Bioactive Molecules	Studies on identification, action mechanism, biosynthesis and receptor of bioactive natural products (hormones, antibiotics, etc.) produced by plants, microorganisms, and marine organisms.	natural products, hormones, antibiotics, carbohydrates, peptides	OJIKAWA, Makoto	NAKAGAWA, Yu	KONDO, Tatsuhiko	
	44. Chemical Biology of Natural Products	Isolation, structure determination, synthesis, biosynthesis, and modes of action of bioactive natural products that regulate biologically and physiologically intriguing phenomena. Anesthetic substances from venomous mammals, and key substances for marine symbiotic relationships. Development of new analytical methods for target molecules using fluorescent probes.	natural products, chemical biology, chemical probe, mode of action, toxins, symbiosis	KITA, Masaki			MORITA, Maho
	45. Polymer Chemistry	Studies on controlled syntheses and functions of biomaterials and medical polymers including artificial glycoconjugates, biofunctional polymers and environmentally friendly synthetic polymers.	Biomaterials, Biopolymers, Functional Polymers, Polymer Synthesis, Organic Synthesis	AOI, Keigo	NOMURA, Nobuyoshi		
	46. Food and Biodynamics	Chemical biology of electrophilic ligands, such as lipid peroxidation products and functional food molecules.	Oxidative stress, Covalent modification of proteins, Functional foods, Lifestyle-related diseases, Extracellular vesicles		SHIBATA, Takahiro		
	47. Applied Enzymology	Mechanistic enzymology of pyridoxal and flavin enzymes. Physiological function of amino acids. Microbial and enzymatic production of useful substances. Lipid biosynthesis in Archaea.	enzyme, D-amino acid, isoprenoid, archaea, pyridoxal phosphate	YOSHIMURA, Tohru (Scheduled to retire in March 2022)	HEMMI, Hisashi	ITO, Tomokazu	
	48. Molecular Biotechnology	Molecular bioengineering for novel biomolecules, bioprocesses and analytical processes. Currently, novel monoclonal antibody screening, bioinformatics of transcription network, single molecule technology, and lipid engineering is major research topics.	Bioinformatics, Enzyme engineering, Protein Engineering, Antibody Engineering, Next Generation Sequencing, High-throughput Screening	NAKANO, Hideo	IWASAKI, Yugo	KOJIMA, Takaaki	DAMNJANOVIC, Jasmina
	49. Molecular and Cellular Regulation	Biochemical and molecular cell biological studies on signal transduction, intracellular traffic, gene expression regulation in animal cell differentiation, growth and cell death.	Ca ²⁺ -binding proteins, Cell death, Cell growth, Membrane traffic, Molecular interactions		SHIBATA, Hideki	TAKAHARA, Terunao	
	50. Molecular Bioregulation	Biochemistry and molecular cell biology on the biosynthesis and dynamics of proteins, nucleic acids and glycoconjugates in higher animal and plant bodies, and on the function of proteins and glycoconjugates in immunity, fertilization, development, and differentiation.	Intestinal tract, Mammary gland, Ribosome Immunobiology, Intercellular recognition and signaling		NADANO, Daita		OHSHIMA, Kenji
	51. Glyco-Life Science	Interdisciplinary studies between bioagricultural, medicinal, and pharmaceutical sciences on regulatory mechanisms for glycans-involved phenomena to attain better health, environment, and food	Glycocalyx, glycans, glycosyltransferase, glycosidase, immune system, neural system	SATO, Chihiro			
	52. Animal Cell Function	Studies on roles of cell surface glycan chains in the cell-cell interaction and signal transduction in fertilization, early development, neural functions and immunological phenomena.	Glycobiology, Sialic acid metabolism, Membrane microdomain, Reverse genetics of Medaka, Glycomics, Glycoproteomics	KITAJIMA, Ken			

Laboratories, Areas of Research, and Staff

Graduate School of Bioagricultural Sciences, Nagoya University

Department	Laboratory	Area of Research	Research Key Words	Staff			
				Professor	Associate Professor	Lecturer	Assistant Professor
4. Applied Biosciences	53. Animal Cell Physiology	Studies on functions of extracellular matrix, transporter proteins, and signal transduction.	Bone, Heart, Molecular Biology, Electrophysiology, Imaging		MATURANA, Andrés Daniel	NIIMI, Tomoaki	
	54. Nutritional Biochemistry	Nutritional regulation of enzyme and gene expression in mammals. Molecular mechanisms for hepatocyte differentiation in 3-dimensional culture systems. Physiological significance of liver circadian rhythm. Metabolism and physiological functions of branched chain amino acids.	Gene expression, Liver clock, Branched-chain amino acids (BCAA), Muscle		ODA, Hiroaki	KITaura, Yasuyuki	
	55. Soil Biology and Chemistry	Studies on the microbial population, and the chemical and biological processes occurring in the paddy field ecosystem.	agricultural land, biogeochemical cycles, microbial ecology, microbial physiology, microbial taxonomy	ASAKAWA, Susumu		WATANABE, Takeshi	
	56. Applied Microbiology	Molecular and chemical genetic studies on signal transduction and gene regulation of agriculturally and industrially important microorganisms, especially filamentous fungi.	Filamentous fungi, Polysaccharide-degrading enzymes, Transcriptional regulation, Signal transduction, Secondary metabolites	KOBAYASHI, Tetsuo (Scheduled to retire in March 2021)	KIMURA, Makoto		
	57. Plant Signaling	Studies on molecular mechanisms underlying optimization of plant growth and development in response to environmental cues with focusing on phytohormone function.	Nutritional response, Plant hormones, Growth regulation, Nitrogen, Iron	SAKAKIBARA, Hitoshi	KIBA Takatoshi	TABATA, Ryo** HASHIMOTO, Mimi	HASHIMOTO, Mimi
	58. Biochemistry	Biochemical, molecular genetic, and microscopic studies on regulatory mechanisms of development of plant organs such as flowers, pollen grains, and roots.	Flower development and anthesis, Pollen morphology, Meristem organization, Jasmonic acid, Transcription factors		ISHIGURO, Sumie		MAEO, Kenichiro
	59. Molecular and Functional Genomics	Biochemical, cellular and genetic studies on molecular mechanisms of chlorophyll biosynthesis, nitrogen fixation, circadian rhythm and phytochrome signal transduction in cyanobacteria and plants.	Cyanobacteria, Chlorophyll biosynthesis, Nitrogen fixation, Plants, Circadian clock, Plant hormones	FUJITA, Yuichi	YAMASHINO, Takafumi		YAMAMOTO, Haruki TANAKA, Natsuki***
	60. Photosynthesis Research	Studies on molecular functions and regulation of membrane proteins that support photosynthesis and inorganic nutrient acquisition in plants and cyanobacteria.	(Cell Dynamics) Biochemistry, Cell Biology, Channel, Metal, Organelle, Plant, Membrane Transporter, Molecular Biology, Vacuole (Photosynthesis Research) Photosynthesis, Nitrate assimilation, Nitrogen fixation, Chlorophyll biosynthesis, Biofuel				MAEDA, Shin-ichi NAKANISHI, Yoichi
	61. Developmental Signaling Biology	Studies on regulatory mechanisms of biochemical and molecular processes involved in the growth and development of higher plants.	ethylene biosynthesis, apical dominance, parthenocopy, protein mass spectrometry	MORI, Hitoshi			
	62. Plant Cell Function	Molecular mechanisms of plant growth and development, and their regulation in response to environmental signals.	meristem, endosperm, stress, seed dormancy, jasmonic acid, membraneless organelles	HATTORI, Tsukaho (Scheduled to retire in March 2021)	UEGUCHI, Chiharu TAKEDA, Shin		
63. Plant Metabolic System	Studies on biological functions and regulatory mechanism of plant metabolism.	amino acids, environmental stress, mathematical modelling, metabolome, specialized metabolites	HIRAI, Masami				
64. Metabolic Balance of Ecosystem	Methodology development of analysis of metabolic balance of ecosystem and its application to applied sciences.	homeostasis, environmental analysis, complexity, NMR, data science, machine learning	KIKUCHI, Jun				

**Designated Lecturer

***Designated Assistant Professor