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F. \F. MF. (Academic Staff	%EF.F.'2F.F. ÆF.F. Research Fields	G;GSG}GSGW Keywords
MF- 5 Professor	È F. G ž Masaki MIZUNUMA " (ý+ %? >#Ō"@G%4Ý •G"#ÝFŌFŌH >ï? >P>xGEG>G Fp ²1úG" ÁG FÚFÚFéG F"IFŪH >ï? >P>xFŪ6ð ZFéG (Q èH FÚG G (ý+ ZFp (È µ SG"0Ž ÁFéG F'G Fih " (ý- #Ō"@G%)z.xG"#ÝFŌFŌ* iG% Q è µ SFŪ6ðFéG %É'24Ý •H) z.xH Q è We focus on mechanisms of Ca2+-dependent signaling using the unicellular eukaryote, Saccharomyces cerevisiae as a model system. In particular, we are currently investigating aspects of calcium-dependent signal transduction in yeast, including cell-cycle, life span, and	Yeast, C. elegans, Lifespan
(M 5 Visiting Professor	2e •F. ú Takeshi AKAO "è4Ç4Ý •G" FÿFèG FøFçFí5 4 #Ý4Ý •Fp Á#ÝG@G\GmÇ FpG@G\Gn _ G" <#ÝFçFø,æ 4Fp(- &' 9 •/jFp6ä\$ÍH è 4Ç4Ý •Fp w#Ý µ+ Fp4G \$x0j IFp0Ž ÁH "á\$x*ñ" • /jFp6ä\$ÍFúFúG"% æFçFøFŌG F' Applied genomics of sake yeast and the related industrial strains: Utilization of the genome information for exploration of unique DNA markers in each lineage, genetical study on characteristic features of valuable sake yeast strains and development of efficient breeding method.	è 4Ç4Ý • H Á#ÝG@G\GmÇ 4 "I òFp4G Ū Sake yeast, Applied genomics, Genetics of brewing characteristics
(M 5 Visiting Professor	&>1ÁF. T È Atsuko ISOGAI "è4ÇG !•4ÁFp96 ¼ B (FŪ6ðFéG %É'2G"/œFóFöFŌG F "I òFú \$ ZFéG B (G" ÁG FÚFÚFçH FíFp#Ō B µ SFp0Ž FÚG G D š •/jFp& 'gG"% æFçFøFŌG F' Studies on the aroma compounds in sake and shochu, aiming at identification of components responsible for the characteristics, elucidation of their formation mechanism and development of control techniques.	è4ÇH !•4ÁH 96 ¼ B (Sake, Shochu, Aroma compound
(M 5 Visiting Professor	¾ WF. ò/ñ Kazuhiro IWASHITA ;Ū,æG" p °FøFçFí5 4 #Ō"@FŪFŌFŌFŌH è4ÇFúFúFp G ;Ū,æFb"i òFŪ6ðG G (ÈGoG9GYGHGnG"G@G\GmÇ GmG=GGG" p °FøFçFí)r œG8GmGQG=GGFúG G 0Ž Fp B ÝG" <#ÝFçH ;Ū,æFúG G µ+ ò"@2AFp#Ō#ŌG%œ FíFú5 4 2Fp6ä\$ÍFúFúH #" CG ÇFp ú áFú fFçFŌ5 4 1 G"% æFçFøFŌG F' The genomics and metabolomics study of industrial microorganisms (especially Japanese national fungi of Aspergillus oryzae) to illustrate the primitive molecular mechanisms. The outcome of our researches should be applied to the design for new industrial strains and new process to produce beneficial metabolite and fermentation products.	5 4 #Ō@H)r œG8GmGQG 0Ž ŌH G2G\GgSŠGEGuG• Fermentation microorganism, Multiomics analysis, Innovation
(M 5 Visiting Professor	Å#åF. m Å Tomotake MORITA \$Î4ÝFúG G G^G2G8GgGŠGG(ò ;Fp#Ō#ŌFø Á#ÝFú6ð " @FpGGG=GxGŠGYG•G>G µ+ 0Ž ŌF,4G É) nFŌFí 5, G"/œFóFöFŌG F' To develop new bio-based materials, we are promoting screening, characterization, and genetic modification of industrial microbes.	G^G2G8GgGŠGG(ò ;H #Ō #Ō Å#Ý #Ō"@ Ū Bio-based materials, Industrial microbes, Applied microbiology
ø M 5 Associate Professor	7÷ -F.1Ý3d Yoshiteru AOI #" C pFŪ "Fß N ~FçFŌFŌG 7' ò8ð ò #Ō"@G" P1ßFŪH 8 , \$xFú (7³ ò8ð •/jFp6ä\$ÍH D • ò8ð5 0[#Ō"@Fp µ+ 0Ž ÁFø <#ÝH D! •%± Q j D šGoG9GYGHGnFp0Ž Á \$x FøFéG F'FíG G G"3úFèFŌH #Ō"@Fp#Ō ÁFúG G µ+ G" ÁG FÚFÚFçH #Ō"@G" D šFéG /jG" mFŪ °G G FâG FŪ . G" p °FøFçFí • <#Ý2(;Fp6ä ÁFú ¥FáFí ,Fí Fú4("½G" S(FéG FâFøG"% æFçFøFŌG F' Our research goals are (i) bringing innovation to microbial cultivation, by development of radically new cultivation technology; (ii) isolation of environmentally important or potentially useful but yet-to-be cultured microorganisms (iii) puzzling out the reason as to why most of the environmental microorganisms are recalcitrant for cultivation.	•%± #Ō"@H 7' ò8ð ò #Ō"@H %@G%0I4ð Unknown microbes, Unculturable microbes, Dormancy and resuscitation

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F. \F. MF. (Academic Staff		%Ê.F.F.'2F.F. ÆF.F. Research Fields	G;GŠG)GŠGW Keywords
ø M 5 Associate Professor	#ã äF-1 , Takahisa TAJIMA	#" C #Õ"@H w µ P y*• ö #Õ"@G * ,æH G" q#ÝFçF "á\$xFú"@2A#Õ#ØFpFiG Fp#Õ /0• y6ä\$ÍF¹G²G8G GIGTG1G=GGFúG G G@G\Gn_ G æ1p"@Fp0Ž ÖFç Fp <#Ý Development of biocatalysts for efficient bio-conversion processes by using solvent tolerance microorganisms and psychrophile. Bioinformatic analyses of genome information and metabolites, and their utilization for metabolic engineering.	"@2A#Õ#ØH * ,æH æ1p d Û Bioproduction, Psychrophile, Metabolic engineering
ø M 5 Associate Professor	p <"F.U : Ê Miyako NAKANO	GMG•G_G=2A*(0Ä (Ý8iFp>ÝFöF÷FÖG (%6P Û •FyH (G2GyGGFúFúFp\$S N /Fp æ H \$' iH . "@*• ö"Ó "FúFúF G FöFöFÖG F¹FäG G Fp#Õ"@ Û\$xFú µ IG"2A5 (Ö/æ G"#ÝFÖF¹(%6P S4 ÖŽ Ö 2FúG G ÖŽ ÁFéG F¹ Glycosylation, which is one of the posttranslational modifications of proteins, is involved in infection by pathogens such as bacteria and viruses, cancer and acquisition of drug-resistance. We investigate these biological mechanisms with detailed analysis of glycan structures by mass spectrometry.	(%6PH 2A5 (ÖH G²G8GIGŠG Glycan, Mass spectrometry, Biomarker
ø M 5 Associate Professor	#äF-7o M Ryuichi HIROTA	#Õ"@Fp ²8r -(öF÷FÖG GxG•Fp#Õ"@ #"H æ1pFú6öF '2F¹ zFú #Õ"@G"#ÝFÖFöGxG•Fp æ1pGoG9GYGHG GIGŠFp#Õ è µ+ G" (ÊGzGgGyF÷0Ž ÁFçH GxG•9x-s' "@G" QFöFi#" C w iH GxG•2(; ä i e8ÝFp0Ž öH G²G GIGŠGcGTG1 •/jG G²G8GeG(GIGG S(G Á#ÝFéG Basic studies on the phosphorus metabolism in microorganisms, and its applications to biotechnology such as phosphorus removal using phosphate-accumulating organisms, phosphorus recycling from activated sludge, biosafety strategy, and the construction of bioprocesses	GxG• æ1pH G²G=GTGxG0H G²G G(GFGŠ Phosphorus metabolism, Biotechnology
ø M 5 Associate Professor	.(äF-1 Makoto FUJIE	9x'¼ Ü"@Fö #Õ"@Fp%& « 8#ÝFúFöFöFö (Ê#Õ"@ '2G'/œFöFöFÖG F¹G Fi>ÖG@G\Gn)...7Ý •/jG" <#ÝFç #Õ"@FpG²G8GIGG#Õ#Ø+ ŠG" ¥ VFäFèG %Ê'2G G F¹ We focus on the interaction between microorganisms and higher plants. We also study biomass production using photosynthetic microorganism by molecular biological methods, such as genome editing.	Ü"@ #Õ#Ø%&« 8#ÝHG²G8GIGŠ #Õ#ØH G@G\Gn)...7Ý Plant-microbe interaction, Biomass production, Genome editing
ø M 5 Associate Professor	+Ú «F. , Hisakage FUNABASHI	#Õ / (ÊG #Õ(ý+ G" µ+ ö ! qFöFçFö FØH FiG G FpFä FúG µ+ Fpöä\$ÍG ,FçFÖ <#Ý 2G"6ä ÁFéG F¹ µ+ öGM G=2AH >4ßFúFúG" <#ÝFçF¹G²G8GIG•GEG•G> (Ê #Õ(ý+ Á'Á 2H #Õ(ý+ µ+ D š 2Fp6ä\$ÍG'/œFöFöFö G F¹ Our research focuses on using biomolecules and living cells as functional materials. We are developing novel functional molecules such as biosensing molecules with proteins and nucleic acids. We are also exploring new methods to create, evaluate, and manipulate functional living cells.	#Õ/ µ+ ! qHG²G8GIGŠGEG/ G2G8GIG•GEG•G> Biofunctional materials, Biodevices, Biosensing
(ø M 5 Visiting Associate Professor	.(-F-4) " Tatsuya FUJII	G9GaG 4Ý •¼Fp%? > #Õ"@G" p °FúH FäG G FÜ&gF Fú/²# °H w#Ý"@2A9x#Õ#Ø öH ' GGGVzGG* öFú G9GYGHGnG" (ÊGzGgGyF÷0Ž ÁFçH Ì#Õ •+ 2(;Fp w #ÝFú z'gFöG FäFöG"% æFçFöFÖG F¹ To use filamentous fungi and yeasts effectively, we aim to reveal the mechanisms of their various phenotypes such as high-productivity of useful materials and high stress tolerance.	(Ö"g,æH 4Ý •H Ì#Õ •+ 2(; filamentous fungus, yeast, renewable resources

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F. MF. (Academic Staff		%Ê.F.'2F.F. ÆF.F. Research Fields	G;GŠG)GŠGW Keywords
"F. M Assistant)n#ãF. ó Ê Akiko HIDA	#" C(ý,æFp4 · öFü6öG G "@2A1 1' µ SFøFíFp#Ō"@6è « 8#YH ▯ G%o '1#ŌH FúFÚFâG z mG"0Z ÁFçH G^G2# GFGŠG Á#ÝFéG F' Studies on mechanism of chemical recognition involved motility of environmental bacteria and its roles in biological interactions such as infection and symbiosis, its applications to biotechnology.	#" C(ý,æH4 · öH#Ō@6è%&« 8 #Y Environmental bacteria, Motility, Biological interactions
"F. M Assistant	, ÊF. \ Chihiro FURUMIZU	Ü"@Fý JF»Fú#" C H íFú PFçFö /Fp B6xG #Ō#. µ+ G" 3>Fú š íFâFéFö Á'ÁFéG F'FíFp Ū) G G" (ÊGzGgGyF- 0Z FçH Á#Ý Ž6âG" WFóFöH &%FíFñFp&k G #" CFú z %Ê'2G"% æFçFöFÖG F' Plants respond to shifting environmental conditions by changing their growth, development, and physiology. Our goal is to decipher its molecular underpinnings and to harness the power of plants for the good of society and environment.	Ü"@H ç (ý+ H(ý+ 6è _ 4)H (Ê4 í Plants, Stem cells, Intercellular signaling, Molecular evolution
"F. M Assistant	. JF. A • Masashi YUKAWA	; / (4ÄFü ²8rFú(ó5ý / ▯ ``ö g BFp (Ê µ S0Ž ŌF' %? >GpGUGy#Ō"@F÷FÖG 4Ý •G"#ÝFÖFö (Ê#Ō ŪG%#Ō ì Ū\$×G0GeG{GŠGOFŪG G H >1%Ê'2G%o M FéG F'G Fi>Ø "G G Fí%±0bG"G'GV\$H \$²FpFiG Fp /;G%o p. 6ãŠíFü Á#ÝFéG F' Our main research interests are the molecular mechanism to establish and maintain a bipolar spindle structure, which is essential for proper chromosome segregation. The research projects involve the use of molecular biology, genetics, and biochemistry to characterize the function of proteins involved in the organization of the bipolar spindle in yeast.	(ý+ Ø ‡ H , / (4ÄH (ý+ 9µ A >ï? ? ? >ìH??%? ? ? >Ø>ì>ï? ? ? segregation, Cytoskeleton

± Ú7T)+ œ#Ō è&É Ú%Ê'2&É z æ _ M (M0t/² List of Academic Supervisors

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F·\F·MF· (Academic Staff	%EF·F·'2F·F· ÆF·F· Research Fields	G·GSG}GSGW Keywords
M>ì>ì 5 Professor V5 F·*½ Satoru UENO	8x +!2AFp"@ ö0Û oFÚG G ·\$x ö2AFp0Ž Å Characterization of Physical properties and Clarification kinetics for edible lipids.	+!2A>Ø) ì>Ø " g3?&ã Lipid, Crystallization, Polymorphic transformation
MF· 5 Professor] -F· ë – Kiyoshi KAWAI	8x Fp · dH – ÑH 8x ¶Fú6ðFéG d Ú\$%É'2 Food processing, preservation, and texture analysis.	8x · dH – ÑH 8x ¶ Food processing, Preservation, Texture analysis
MF· 5 Professor U · œF·.+³ ù Yoshihiro SAMBONGI	¶#Ō" @FpG6G[GyG<GŠ æ1p.®\$Ñ2AFp S4 Fø µ+ Fú6ð'2 Studies on structure and function of microbial energy metabolism proteins.	G6G[GyG<GŠ æ1pH 7H#" C ¶# " @H .®\$Ñ2A S4 µ+ >ñ? ? ? ? ?%>ì? ? ? ? ? ? ? ? ? ? ? >ñ? \$? ? ? ? ? ? ? ? ? ? ? ? ? ? H >ü? ?
MF· 5 Professor â#âF· À ... Masayuki SHIMADA	#Ō j µ SFp (Ê Æ (* Ú\$×0Ž ÒFúG G #Ō j d Ú •/iFp6â \$îFú6ðFéG %É'2 The study for understanding molecular and endocrine mechanisms of reproductive functions and developing reproductive technologies.	#Ō j#Ō" @ ÚH (Ê Æ (* ÚH)% j •/i Reproductive biology, Molecular endocrinology, Reproductive technology
MF· 5 Professor â •F· Z Tadashi SHIMAMOTO	8x p ~ (ý.æFp\$S N ö6ð4 4G ÊFø. c*• ö4G ÊFp0Ž Ò FÚG G G\G{G4G2GyGG » q 2Fp6â\$î Analysis of pathogenicity-related genes and drug resistance genes of foodborne pathogenic bacteria and development of norovirus inactivation method.	8x p ~ (ý.æH . c*• ö.æH G\G{G4G GyGG Foodborne pathogenic bacteria, Drug-resistant bacteria, Norovirus
MF· 5 Professor 5e œF· : Takuya SUZUKI	8x B (FúG G #Ō /1*(8#ÝFú6ðFéG %É'2 Physiological functions of nutrients and food factors.	µ+ ö8x H \$8ðH ú ã Functional foods, Nutrition, Human health
MF· 5 Professor p äF·4 >ÿ?!? !? ?!F->ú>ì>÷>ì>ñ	G0GzGyG<GŠG%o+→ k \$? \$L HFp\$î\$U µ SFp0Ž Å Studies of pathogenesis of allergic and autoimmune disorders.	ì ò!V\$UH GCG2GVG9G2G•H \$L GyGIG4GG chronic inflammation, cytokines, mouse models for human disease
MF· 5 Professor 6x F· Ž Takeshi NAGANUMA	#" C#Ō" @2(;Fp Â#ÝFú6ðFéG %É'2 Study on applications of environmental biological resources.	7H#" C>Ø>ì 7H#" C#Ō" @>Ø>ì#] ò Extreme environments, Extremophiles, Biodiversity
MF· 5 Professor 0Y üF· G,e Masahide NISHIBORI	." @G@G\Gn _ G" <#ÝFçFì 7 ™8@FÚG G :ý8@Fp (Ê4 (Ê(Ō)+FÚG G (Ê ...#. Ú\$×%É'2FøFìFp3° ÚG Fp Â#Ý'2 Studies on Mammalian and Avian Molecular Evolution, Phylogenetics and Geography using Their Information of Animal Genome, and Their Application to Agricultural Sciences.	." @4G >Ø (Ê4 ì>Ø (Ê(Ō)+ Ú\$×%É'2 Animal genetics, Molecular evolution, Molecular phylogenetic study
MF· 5 Professor 0Y \$F· Å M Shinichi NISHIMURA	¶#Ō" @Fú#0#ŌFéG 1#ŌG% #Ō" @2AFpG?GmG9GyG GCG2GCG2F8GŠ Chemical biology using bioactive natural products	³!," @ ì ÚF· #Ō# . q ò ì œ" @F· G?C GCG2GCG2F8GŠ natural products chemistry, bioactive metabolites, chemical biology
M>ì>ì 5 Professor *Z 'F·*07• Yoshio HAGURA	8x Fp Š Ú" @ öG%7Á ¼"@ öFp0Ž ÒFøFìG G Fp" @ öG Fì ,0d · dG%0£ •/iFp6â\$îFú6ðFéG %É'2 Analysis of mechanical and electrical properties of the food, and development of food processing and measurement techniques using those properties.	Š Ú" @ ö>Ø>ì7Á ¼"@ ö>Ø>ì8x Mechanical properties, Electrical properties, Food processing
M>ì>ì 5 Professor (ý5 F·2< Kenji HOSONO	â)F\$×Fú8x q2(;Fp& -FøGcGŠGWG%GCGeGwG2G% 4 Fú6ðFéG &k) ì3 ÚFp0!!FÚG Fp%É'2 Socio-economic Agricultural Study about Sustainable Food Resource and Supply Chain.	8x q#Ō#Ø#ö#H 8x q w H â)F\$× \$î Ž Food production management, Food market, Sustainable development

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Research Fields

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Keywords

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Professor Hiroyuki HORIUCHI

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Fp ö&OFÚG Â#Ÿ%Ê'2G Fp Ž6ä :ý8@H ç (ý+ H G@G\Gn)...7Ÿ
Basic and applied study using avian stem cells and gene editing technology in the agriculture field.

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F. M. (Academic Staff	%EF.F.2F.F.ÆF.F. Research Fields	G;GSG)GSGW Keywords
"F. M Assistant #Ō1ÂF. f^ Masashi IKUTANI	Ī ð!V\$U\$L HFŭFŪFáG G0GzGyG<GŠ6õ4 \$?(ý+ Fp z 0Ž Ā Roles of allergy-related immune cells in chronic inflammatory diseases.	G0GzGyG<GS ö!V\$UH GCG2GV GV\$L H ."@GpGUGy Allergic inflammation, Cytokine, Animal models for human disease
"F. M Assistant à ĪF. ß Jun TOMINAGA	Ū"@Fp œ œ BG%"@2A#Ō#Ø μ SFp0Ž ĀFø 8" @#Ō#Ø GŪFø#Ō#Ū. ŪH 8"@ ŪH œ œ B Studies on mechanisms of photosynthesis and biomass production in land plants, development of techniques for sensing plant response to environment, and its application for crop production.	GŪFø#Ō#Ū. ŪH 8"@ ŪH œ œ B Plant Physiology, Crop Science, Photosynthesis
"F. M Assistant Ç ĪF.,F/° >ù? ? F.>ù>í? >ÿ? ? >í> Studies on regulation mechanisms of fertilization processes in birds, Development of techniques for producing genome edited birds and their application.	:y8@Fp w(-4#&iG" D šFéG GoG9GYGHGnFp0Ž ĀH >ĪG :y8@ 8 •/;Fp6âšĪFø Ā#Ū	:y8@Fp#Ō jH G@G(Vn)...7Ÿ Avian reproduction, Genome editing
"F. M Assistant £ •F.&^ " ? ? ? ? ? ? ? ? F.? >í> Studies on immune functions of foods and microorganisms and its application for development of functional foods.	8x G #Ō"@Fp \$?1*(8#ŸFp H(ðFø Ā#ŸFŭ6õFéG %Fø Studies on immune functions of foods and microorganisms and its application for development of functional foods.	Fø \$? Ū>Ø>ĪG2GnG(VFG5GYC Food immunology, immunogenics health

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F·VF·MF· (Academic Staff		%EF·F·2F·F·ÆF·F· Research Fields	G;GSG}GSGW Keywords
MF·5 Professor	&>4ŠF·%\$ ž Naoki ISOBE	o,D ."@ TM+bFp \$?G%œ Æ (* μ+ Immunology and endocrinology in mammary gland of ruminants.	TM c!VH ,æGhGeGOGWH +-!> Mastitis, Antimicrobial peptide, Innate immunity
MF·5 Professor	V#ãF· í / Akihiro UEDA	Ū" @Fp# CGGGVGzGG*· öFp ¥ VFø Ū" @#Ō*ñ ·4 #œ# Ÿ ·/jFp6ä\$î Improvement of environmental stress tolerance in higher plants and development of utilization technologies of plant growth promoting microbes.	Ū" @ \$8ö Ū>Ō# CGGGVGzGG> ·4 #œ# @ Plant nutrition, Environmental stress, Plant growth promoting microbes
MF·5 Professor	·5 F· - " Tetsuya UMINO	È j#Ō" @Fp Q8ö jFø - ²#Ō ÂFü6öFéG %Ê'2 Stock enhancement and conservation resources of aquatic animal.	8ö jH : vH È j#Ō" @ Aquaculture, Stock enhancement, Aquatic animal
M>ì>ì 5 Professor	± /F· 7 Susumu OHTSUKA	· R!"+ (Ÿ ."@Fp "] öH (Ō)+ (8ŌH 4 ìH - ²#Ō ÂFü 6öFéG %Ê'2 Biodiversity, phylogeny, evolutionary biology and conservation ecology of marine invertebrates.	· R!"+ (Ÿ ."@H #Ō" @ "] öH - 2 Marine invertebrate, Biodiversity, Conservation
MF·5 Professor	ì iF· [Ç Taketo OBITSU	o,D \$ Fp8è q <#ŸFø \$8ö æ1pFü6öFéG %Ê'2 Nutrition and feed utilization in ruminants.	~ ìH GMG·G_G=2A æ1pH G6G[G æ1p Digestion, Protein metabolism, Energy metabolism
MF·5 Professor	`ãF· M j Kazuhiko KOIKE	ö&O#Ō#Ō*...H œ(Ÿ.4G%œ Ū" @GeGwG·G=GVG·H FÜG ^ Æ ·H GCG·GB&KH GIG·G>G(GŠGd æH Fp0Ū o Coastal biological processes of Seto-Inland Sea, coral reef and mangrove swamps based on primary producers (valve microalgae).	œ(Ÿ.48ŌH Ū" @GeGwG·G=GVG· B Microalgae, Phytoplankton, Photosynthesis
MF·5 Professor	· -F·7g M Yoichi SAKAI	:68ŌFp&k G)¼ jFü6öFéG /œ ·#Ō Â Ū\$œ%Ê'2 Behavioral ecology of fish reproduction.	&k S4 >Ō>ì)¼ j S/ì>Ō>ì5 ¥1* Social structure, Mating tactics, Field survey
MF·5 Professor	ã#ãF· Â ... Masayuki SHIMADA	#Ō j μ SFp (È Æ (* Ū\$œ0ž ŌFüG G #Ō j d Ū ·/jFp6ä \$îFü6öFéG %Ê'2 The study for understanding molecular and endocrine mechanisms of reproductive functions and developing new reproductive technologies.	#Ō j#Ō" @ ŪH (È Æ (* ŪH)¼ j ·/j Reproductive biology, Molecular endocrinology, Reproductive technology
MF·5 Professor	j5 F· < , Toshihisa SUGINO	ú ² öG" , -FçFî TM"58è8ö'ö#.Fp3ä'2 Effects of Feeding management on dairy cattle health and performance.	TM"5>Ō>ì8è8ö Ū>Ō>ì æ1p Dairy cattle, Nutrition and feeding, Metabolism
MF·5 Professor	à ìF·G G Rumi TOMINAGA	Ū" @Fp(Ÿ+ (ìFø g Â g BFü6öFéG %Ê'2 Studies on cell differentiation and development in plants	/²ö(Ÿ+ H ? ŸH 3? x ì È Epidermal cell, Root hair, Transcription factor
MF·5 Professor	(· ŸF·7o / Takahiro YONEZAWA	\$ IG 5 #Ō ."@FpG@G\Gn4 ì Ū\$œ%Ê'2 Evolutionary genomics on the domestic and wild animals	(Ō)+>Ō>ì7Ÿ K · Â>Ō>ì4E ¥ phylogeny, demography, selection
MF·5 Professor	ö ìF· ß Jun WASAKI	?Fp ØG FùFÚFáG Ū" @C& #œ# @6è%& « 8#ŸFø8ö (·ÂjH Ū" @#Ō#. ŪH 8ö (· Â Rhizosphere, Plant physiology, Nutrient dynamics	·ÂjH Ū" @#Ō#. ŪH 8ö (· Â Rhizosphere, Plant physiology, Nutrient dynamics
ø M 5 Associate Professor	x ,F·*½ >ÿ? ? ? ? ? F->i>ÿ>i>ö> Assessment and restoration of aquatic environments using the tools of analytical chemistry.	(Ō ì ŪG"GRGŠGyFøFçFî È# C Fp0Ū oG%œ Ÿ ŸFü6öFéG œ ç È Ō ì ŪH # C Ÿ ŸH È# C Environmental analytical chemistry, Environmental remediation, Aquatic environment	Environmental analytical chemistry, Environmental remediation, Aquatic environment
ø M 5 Associate Professor	·.(F· ³° Aki KATO	·.48ŌFp Q8ö jG%œ - ²Fü6öFéG (Ō)+ (8ŌFÜG G #Ō#. # Ū\$œ%Ê'2 Aquaculture and conservation of algal resources.	%!J.4GCG·GBGp8ŌH 8x#Ÿ ·.4 ¼ Â š · Coralline algae, Edible seaweeds, Climate change

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F·\F· MF· (Academic Staff	%EF·F·2F·F· ÆF·F· Research Fields	G;GSG)GSGW Keywords
M> > 5 Professor	GMG·G_G=2AGxG·4ß iG%+·GxG·4ß iFû6ôG G ' 4Y(2AFp#Ō i Ū\$×%É'2 Biochemistry on enzymes and proteins which mediate protein phosphorylation and dephosphorylation.	_ 4)H 4Y(ôH &,,) H/HEHCHJH=HHF·HPHNN=HJH Neuron
MF· 5 Professor	%¼ NF· ã ù Yasuhiro ISHIHARA G>GxG0(ý+ Fp\$S Â#Ō#. Ū\$× z mFp0Ž Â Glial function in health and disease.	&,,) . #.G%~ ö ŪH G>GxG0(ý+ H GUGy ."@ Neuropharma-toxicology, Glia, Model animals
M> > 5 Professor	'0F· ô*O Kazuyoshi UKENA 8x 'G G6G[GyG<GŠ æ1p1*(Fû6ôG G +; Æ"@2AFp#Ō, Fû6ôFéG %É'2 Study on the physiological functions of neuronal substances regulating appetite and energy homeostasis	&,,) Æ (* ŪH &,,) GhGeGOGWH Neuroendocrinology, Neuropeptide, Appetite
M> > 5 Professor	, CF·G FÛG Yukari KUGA u p#Ō Â(ŌFûFÚFáG Ū"@Fø #Ō"@Fp 1#ŌFû6ôFéG %É'2 Plant and microbe symbioses in soil ecosystem.	,æ ?H u p ö\$S H (ý+ >Ū#Ō %É'2+ Mycorrhiza, Soil-borne disease, Cellular-ecological functions
M> > 5 Professor	,.(F· Â Ê Akiko SATOH &,,) (ý+ FûFÚFáG +wGMG·G_G=2AFp4E 93z3æGEGG The mechanism of the polarized vesicle trafficking in neurons.	GEGG·F·É'2> ò(ý+ >Ū> GEGuG Golgi units, Photoreceptors, Drosophila melanogaster
M> > 5 Professor	%œ#âF· M j Kazuhiko TAKEDA ¼ Ê jFûFÚFáG ¼5 "@2AFø ¼5 q ô4ß(ôFp FøFifp#" C · ÁFp%É'2 Environmental dynamics and analysis of trace compound and reactive oxygen species in the atmosphere and hydrosphere.	#" C (Ō ì ŪH q ô4ß(ôH ß " @ 2A Environmental Analytical Chemistry, Reactive Oxygen Species, Trace Pollutants
MF· 5 Professor	p ¼F· Ō ... Takayuki NAKATSUBO 7c æ#Ō Â(ŌFûFÚFáG Ū"@G%."@G%œ #Ō"@Fp z m Roles of plants, animals and microorganisms in terrestrial ecosystems.	#Ō Â(Ō#Ō Â ŪH Ū"@#Ō Â ŪH # - 2 Ecosystem ecology, Plant ecology, Environmental coservation
M> > 5 Professor	£#âF· † / Toshihiro YAMADA #Ō Â ŪG" ô&OFøFçFi#Ō"@G" - 2FéG %É'2 Conservation of organisms based on ecology.	#Ō"@ "] ö - 2H ¶ /L · ÂH !Ō · Ø Biodiversity conservation, Population dynamics, Tropical forests
MF· 5 Professor	ô îF· ß Jun WASAKI ?Fp ØG FûFÚFáG Ū"@C& #Ō"@6ë%& « 8#ÝFø8ô (· ÂjH Ū"@#Ō#. ŪH 8ô (· Â Rhizosphere, Plant physiology, Nutrient dynamics	Rhizosphere, Plant physiology, Nutrient dynamics
M> > 5 Professor	G,G1GzGZGŠG,F·%? Ê* Masumi VILLENEUVE #ú8 Fp!Ō Š ŪG" ô&OFøFçFi#Ō /GpGUGy+wFø#Ō /6ô4 Fp%É'2H GWGwGQG>GUGxG^Gx6ô4 Fp ô&O%É'2 Thermodynamic studies on interfacial behavior of bio-related substances using model cell membranes, basic science related to drug delivery.	#ú8 ì ŪH !Ō Š ŪH +w Interface Chemistry, Thermodynamics, Membranes
ø M 5 Associate Professor	¼·F· R Ê Yoko IWAMOTO ¼ ÂFû s8jG" IG Fé ± ¼ · RëFp"@2A #"4#&iFp0Ž Â Biogeochemical cycles between the atmosphere and ocean and their impact on climate.	G6G0G{GLGyH 7¼H #Ō"@ ...# + Aerosol, Cloud, Biogeochemistry
ø M 5 Associate Professor	u1ÂF· r#è Akio TSUCHIYA G0GIGL·Ō · ØFp ~ »FûG G ¼ Â š ì Climate change caused by deforestation of rainforests in Amazonia.	` ¼ Â ŪH #Ō"@ ¼1ß ŪH °3o ¼ Ū Small climatology, Biometeorology, Dendro-climatology
ø M 5 Associate Professor	<.(F· œ æ Mitsuyo SAITO 7c æHZ " Ê · æFûFÚFáG #" C>Ū ...2A>Ū#Ō Â(ŌëFp%& · w#EH " Ê#Ō Â(ŌH #" C ...2A Environment-geology-ecosystem interactions in terrestrial to coastal waters.	& · w#EH " Ê#Ō Â(ŌH #" C ...2A Groundwater, Coastal ecosystem, Environmental geology

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F·\F·MF· (Academic Staff		%EF·F·2F·F· ÆF·F· Research Fields	G;GSG)GSGW Keywords
ø M 5 Associate Professor	p ØF·7ž Miyabi NAKABAYASHI	5 #Ō ·" @Fp/œ ·G%o#Ō Â Behavior and ecology of wildlife	!Ō ·7μ ØH #Ō Â ŪH 7 ™8@ Ū Tropical rainforest, Ecology, Mammalogy
ø M 5 Associate Professor	? 1F·4) μ Tatsuo NEHIRA	#Ō è#"1ßFûFÚFáG S4 w μ ì Ū\$×%Ê'2 Research of structural organic chemistry in life science.	w μ (Ō ì ŪH ³!)@ ì ŪH Ç § , ö Analytical organic chemistry, Natural product chemistry, Circular dichroism
ø M 5 Associate Professor	j·F· ! Akira HIKOSAKA	·" @4 ìFpG@G\GnH 1#ŌH \$î#Ō Ū\$×%Ê'2 Genomic, symbiotic and embryonic studies on metazoan evolution.	·" @4 ì Ū>Ø>ì!"+· ·" @>Ø>ì #Ō · Evolutionary Zoology, Acoelomorpha, Metazoa
1nF· Œ Lecturer	^#ãF· Ó Motomu TODA	Ã Ø#Ō Â(ŌFpG6G[GyG<GŠG%o!c(ò # Energy, water and carbon exchange between atmosphere and forest ecosystems.	GcGwGQG=GGH GpGUGxG·G> Flux, Modelling, Climate change
"F· M Assistant	` ØF· → · H5?!? ? F·>÷>û>î>í? >í>ý	p á&,) (ŌFûFÚFáG ß Ó\$×Fú Æ (* μ SFp0ž Â Elucidation of comprehensive endocrine mechanism in central nervous system.	&,) (Ê#Ō" @ ŪH Æ (* ŪH >óGMG·G_G=2A 1 z 0 w / Neuronal molecular biology, Endocrinology, G-protein coupled receptor

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F·\F· MF· (Academic Staff	%EF·F·2F·F· ÆF·F· Research Fields	G;GSG)GSGW Keywords
M> > 5 Professor	Ō §F· Å “ ? ? ? ? ! ? % ? F·>δ>ù>ì>ù?>	7È6x8@>+;Fp g Å\$G% μ+ \$x\$14)G" -FØG G6GbG@G\GnFp#.0Ž Understanding epigenomic mechanisms that underlie the development of primate brain.
M> > 5 Professor	ŧ5 F·*Ō Hajime OGINO	+(Ý ·."@Fp\$!#ŌG% ŏl pFø p á&,.) (ŌH G" -4ÄFé G@G\GnG%G6GbG@G\Gn D š μ SFp%É'2 g#Ō8@FúFúFáG G@G\Gn4 iFø#" C4: ÄFúFôFôFôFp Ū\$%É'2 Genomic and epigenetic regulation of development and regeneration (sensory organs and central nervous system) in vertebrates. Molecular mechanisms of genome evolution and environmental adaptation in amphibians.
M> > 5 Professor	,ä äF·/ñ Yutaka KIKUCHI	FÜG# π `#" CG[GQGVG)GŠG=Fp%É'2 G=G{GIGOG·g / S4 Fp0Ž Ō Studies on tumor microenvironment network. Analysis of Chromatin 3D Structure.
M> > 5 Professor	,i F· TM Makoto KUSABA	GpGUGy Ū"@G"#ÝFôFi-%*·i D šFp (Ê μ SFp%É'2 G;G= "FúFúFáG (Ê4G Ū\$×0Ž%É'2 G;G=G%GAG·G<G=8@G%GKGTGR8@H FiFp ÚFp9x' ;Fp – NFø%É'2 Molecular mechanism of leaf senescence, Molecular genetics in the genus Chrysanthemum, Genetic resource of chrysanthemum and cycad.
M> > 5 Professor	NF· ë/ñ Takahiro CHIHARA	&,.) G2°Fp g BH BlÍH FiFôFô)T äG" –G (Ê ö% Fp0Ž ÄF'#" C>Ō \$8δ" g ÄH ÝFôH GGGVGzGGFúFúH Fø ¶ G /œ ·FúFúH Fp%& « 8#ÝFú6δFéG %É'2 Molecular mechanism underlying neural network formation, maturation and maintenance. Genetic studies to reveal molecular mechanism for the interaction between environment (nutrition, odor and various stress etc.) and individual condition (longevity and behavior etc.).
M> > 5 Professor	ØF· < Toshinori HAYASHI	w · g#Ō8@G"#ÝFôFi p i#ŌH \$!#ŌFp%É'2F1 p i#ŌFúFúFáG (y+ Q j μ SFp%É'2 Study of organ regeneration and development using urodele amphibian. Regulatory mechanism of cell proliferation in organ regeneration.
M> > 5 Professor	£ ·F·)> μ Tomio YAMAGUCHI	GAG? Ū"@Fp(Ō)+H (8@H IG #Ō ÄFú6δFéG %É'2 Phylogeny, taxonomy and ecology of bryophytes.
ø M 5 Associate Professor	- JF· J ? ? ? ? ? ? ? F·>δ>ó>í? >	g#Ō8@Fp' (iFø#" C4: ÄFú6δG G G@G\Gn4 i Ū\$%É'2 Genome evolution underlying speciation and environmental adaptation of amphibians.
ø M 5 Associate Professor	Ü œF·<_ “ Tatsuya UEKI	·#Ō!"+(Ý ·."@FúFúFáG 5 “G2G8G·Fp δ)° μ SFÜG G %T μ SFp%É'2 Study on the mechanism of metal ion accumulation and adhesion by marine invertebrate animals.
ø M 5 Associate Professor	ß §F·*>(è Ê Misako OKUMURA	œ π%±GoG9GYGHGnFp0Ž Ä>Ū>ì/2#° · (öFp (Ê ö% Fp0Ž Molecular mechanism of phototransduction. Molecular mechanism of phenotypic plasticity.
ø M 5 Associate Professor	1 §F· G ž Masaki SHIMAMURA	GAG? Ū"@Fp(Ō)+H (8@H g Ä IG #Ō ÄFú6δFéG %É'2 7c V Ū"@Fp(y+ (/ä μ SFp " j öFø4 iFú6δFéG %É'2 >ü? ?%? ? ? ? ? ? %>Ø>ì? ? ?\$? ? ? ? ? %H ? ? ? ? ? ? bryophytes. Diversity and evolution of cell division system of land plants.
ø M 5 Associate Professor	5e œF· L Atsushi SUZUKI	g#Ō8@G"GpGUGyFøFçFi+(Ý ·."@Fp 6 †\$!#ŌH ç(y+ F äFø (iH FÜG G) Ê i#ŌFp%É'2 Molecular mechanisms of vertebrate early development, maintenance/differentiation of stem cells, and tissue regeneration.

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ö&O#Ō"@ Ū É ß ç Ū ŒProgram of Basic Biology >& >'

%EF.F.'2F.F. ÆF.F.
Research Fields

G;GSG}GSGW
Keywords

ø M 5 #ã]F.0« •
Associate Kunifumi TAGAWA
Professor

• R#Ō"@ (ô .".@G<GjGEGnGEG l'+. ".@GnGOGuG4C
G" (Ê\$î#Ō#Ō"@ Ū\$×G%‰ §3QG@G\Gn&É Ū\$×Fú0Ž Ō!
, .".@FúG G Fú e '‰&&à .".@Fp2s ;G 4 ìG"0Ž ÁFéG
%Ê'2
Study to elucidate the origin and evolution of
Deuterostomia and Bilateria by analysing molecular
developmental biology and comparative genomics of ma
organisms such as Enteropneust hemichordate and Acc
flatworms.

• R#Ō"@H G6G,G7GUG,G7>Ō š:
Marine Organisms, EvoDevo,
Comparative genomics

ø M 5 #ããF. \$^>
Associate Hiromi TSUBOTA
Professor

Ū"@G Ū#ŌFú6ôFéG á K#Ō"@ Ū\$×G%‰ Ū"@ ...#. Ū\$:#Ō"@ "] öH Ū"@ ...#.H (Ê(Ō)+
&k Ū\$×G%‰ (Ê(Ō)+ Ū\$×%Ê'2
Ū
Studies of plants and vegetation focusing on the ecology,
Biodiversity, Phylogeography,
evolutionary biology, biogeography, phytosociology, anc
Molecular phylogeny
conservation of biotas on islands surrounded by ocean ;
its related area.

ø M 5 ! #ŌF.FãFêFø
Associate Kozue HAMAO
Professor

.".@(ý+ Fp(ý+ 9µ A D šFø(ý+ (/ãFp (Ê µ SFú6ôFéG
%Ê'2
Molecular mechanisms of cytoskeletal regulation and ce
Cytoskeleton, Mitosis, Cytokinesis
division in animal cells.

(ý+ 9µ AH (ý+ (/ãH (ý+ 2A (/ã

ø M 5 ,5 F. Á
Associate Nobuaki FURUNO
Professor

g#Ō8@Fp 8 g BH 8 (ìH Fp (Ê µ SFp0Ž Ō>Ō>ì 8 BlíG
‡\$î#ŌFp"l fFú(ý+ ø ‡Fp µ SOŽ ŌH ì#ŌG%‰ š ÁH "lFú | 8 g B>ø>ì 8 Blí>ø>ì(ý+ ø ‡>ø>
*ãFp g BH FúFôFôFôFp (Ê µ SFp0Ž Ō D*ã g B
Molecular mechanism of oogenesis and analyses of the
Oogenesis,Oocyte maturation,Cel
unique cell cycle mechanism of oocyte maturation(meio:
cycle,Morphogenesis,Limbdevelo
and early development. Study of the molecular mechani
ment
of regeneration and development of the limb formation.

ø M 5 U †F.4s µ
Associate Ikuo MIURA
Professor

g#Ō8@FúFÚFáG 4 ì4G Ū\$×%Ê'2H G@G\Gn4 ìG%‰ ç
' "] öH FÚG G öFø#Ō jFp%Ê'2

(Ō)+4 ìH öH G@G\Gn1 1'

Studies on Evolutionary Genetics of amphibians (genom
Phyletic evolution, Sex, Genome
and phenotypic evolution and biodiversity), and sex and recognition
reproduction.

1nF. Œ ò •F. ô ö
Lecturer Kazuki MORIGUCHI

G^G=GTGxG0>Ū%? >#Ō"@6ë%& « 8#ŸFpGoG9GYGf
'2
4G ÊFp È 1 ŪGoG9GYGHGnFøH 4G ÊFp Ñ SFø "] G^G=GTGxG0H È 1 ŪH %& « 8
FôFôFôFp%Ê'2
4G Ê _ °

Molecular mechanisms of bacteria-eukaryotes interactio
Bacteria, Horizontal gene transfer
Molecular mechanisms at horizontal gene transfer, and
Interaction, Gene introduction
spread and diversity of genes caused by it.

"F. M 9x «F.F. Ê
Assistant Haruko TAKAHASHI

#Ō / ¥>Ō? ? >ì? ? ? ? ? >Ō>ß - \$×FÚG#))ÊGpGUGyF
G=GGGUGŠGMG"#ŸFŌFî)+ œ\$×0Ž ŌFúG G H FÚG# >ß -? ? >ì? ? ? ? GpGUGy>ø:
GnFp0Ž ÁFø \$ª ö% Á#Ÿ C>ø>ì FÚG# Ÿ
Analysis of the malignant mechanism of cancer and its
3D in vitro model, Tumor
therapeutic application by integrated analysis using 3D i
microenvironment, Anti-cancer
vitro cancer tissue models, images and omics data.

"F. M ™ ŸF. Á

9x'¼ Ū"@FúFÚFáG \$î#Ō D š µ SFp0Ž ÁG"% æFçFî öł

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X#. #Õ è&É Û È ß ç Û Ò Program of Mathematical and Life Sciences >& >'

F. \F. MF. (Academic Staff	%EF.F. 2F.F. ÆF.F. Research Fields	G;GSGJGSGW Keywords
M> >ì 5 Professor 8ã6èF.™ Makoto IIMA	#Ô" @4 .FúFúFú6ô €FéG H FâG FæG Fú0 7§ G Fí GyFú PFéG X#. \$x0(!FUG Fp#. 1=G G 9,%É'2 Theoretical and experimental study of complex flows and models such as swimming/flying problems based on mathematical science.	v / Š ÚH #Ô" @Fp KFBG%8Ô*gh Fluid mechanics, Swimming/Flying Vortex dynamics
M> >ì 5 Professor (F. †3\ Shunsuke IZUMI	#Ô /9x (Ê (ÔFbFiG Fp>ù>í>ø>ð>ôGIGVGxGQG=GGF >ý>í>ø>ð>ù>ð>ù>ý 2G"#YFÔFi ì Û .4J"@2AFb H(ô Development of MALDI matrix for protein analysis and search for chemical repellents using SALDI-IMS method	GIGyGUG1GŠ>ìGIGVGxG=GG>ì OŽ Ô>ð>ì>ý>í>ø>ð>ù>ð>ù>ý SALDI-IMS method
M> >ì 5 Professor ••F. T Atsushi SAKAMOTO	>Ô>Ý>Ô>ì Û" @Fp#" C ÂÂFøGGGVzGG4: ÂFp (Ê µ (ôG" ô3HFøFéG Û" @Fp B6x#Ô Ñ S\$ >ç>ì>Ô>ß>Ô>ì G%#ø <#YFû ¥FâFi ô&O IG Â#Y%É'2>ì>ôGGGV 8y ú ô ì iH .48@G^G2G8!P q6ã\$ÍFúFú>Ô (1) Molecular mechanisms for stress responses and adaptation in plants; (2) Metabolic plasticity-based strategies for plant growth and survival; (3) Basic and applied research on plant function towards its agricultural and industrial applications (improved performance under stress; algal bioenergy innovation, etc.).	Û" @ (Ê µ+ H GGGVGzGG ÂÂH 1pG% (Ê#Ô#. Plant molecular function, Stress response, Metabolism and molecular physiology
MF. 5 Professor F. ? F. M Shin-ichi TATE	zFøFçFô>ù>ù>ð" #YFÔFi 3!) š ôGMG•G _G=2AFp µ+ Fp0Ž ÂH 3!) š ô8• æG" ÔFçFi(ý+ ÆGWG(GQGGeGzGG & µ SFp0Ž ÂH > ÆG=G(GIGOG•Fp'g / S4 OŽ Ô Exploring functional mechanisms of intrinsically disordered proteins mainly with NMR. Studies on protein droplet formation within cells. Three-dimensional structure analysis of chromatin inside the cell nucleus.	>ù>ù>ðH 3!) š ôGMG•G _G=2AH G(GIGOG•g / S4 NMR, Intrinsically disordered proteins, The three-dimensional structure of chromatin in a cell nucleus
MF. 5 Professor p#ãF.*½ Satoshi NAKATA	ì Û ú . o ÂH GxGHGnG%G_GMGŠG• g BH +- k))É iH #1ßH †G% (±G% š T'¼H H +- k9Q . /¼H 8 '1@ WF '56è\$Í ŽFéG #1ßFú6ôFéG %É'2 Research on phenomena which exhibit spatio-temporal development under nonequilibrium conditions, e.g., chemical oscillation, rhythm and pattern formation, self-organization, nonlinear phenomena (synchronization, bifurcation, hysteresis), and self-propulsion.	+- k))É iH G_GMGŠG• g BH ú . #1ß Self-organization, Pattern formation, Oscillation
M> >ì 5 Professor ,(•F. î M Koichi Fujimoto	4 iFéG #Ô è /Fp#. 1=%É'2H X#. GpGUGyFø GUGŠGM zFú P1ßFy>ø>ì(ý+ >Û "(ý+ >Û b >Û ¶ />Û&k Fp "7u T FIG . Û" @G%# #Ô" @Fp\$î#ÔG%04 iG% ' ÑFp X#.>Û> GTGnG"#.0ŽFç £ FéG X#. &É Û>Û Theoretical study (mathematical modeling and data analysis) of evolving multi-level dynamics (gene expression, shape, and behaviors) in plants, animals, and microbes.	#. 1=#Ô" @ ÛF. 0 7§(ÔF.#Ô" @" @ ÛF. 4 iF. "] ôF. "7u™ Theoretical Biology, Complex systems, Biophysics, Evolution, Diversity, Multi-scales
MF. 5 Professor •#ãF.%\$ ž Naoki HONDA	JF»Fú#Ô è#1ßG" P1ßFøFçFiH GUGŠGM9Q . \$x X#. G G>H µ " Û*fH)+0£\$x Û*f#. 1=H FúG G GUGŠGM0Ž Ô ; \$îH 4G Ê\$î#G%(ý+ 9µ AG% \$?G%\$î#ÔG%&, G2" G% _ ->Û-1.(Data-driven mathematical modeling of various biological phenomena. Development of data analysis methods based on machine learning (statistical learning theory). Gene expression, cytoskeleton, immune systems, embryonic development, neural circuits, decision making, emotion/conflict.	GUGŠGM9Q . #Ô" @ ÛH #. 1=#Ô" X#. GpGUGxG•G>H µ " Û*f Data-driven biology, Theoretical biology, Mathematical modeling, Machine learning
MF. 5 Professor £•F. Takashi YAMAMOTO	JF»Fú#Ô" @Fú <#Y •+ FúG @G\Gn)...7Y •jFp6ã\$! \$L HGpGUGy 80 •j6ã\$! (ý.48@F:FpG^G2G8!P q6ã\$ÍF' . " @ \$î#ÔFp (Ê µ SFp Ô Development of genome editing technology for various organisms. Generation of disease model cells and animals. Development of biofuel using microalgae. Analysis of molecular mechanisms during animal development.	G @G\Gn)...7YH \$L HGpGUGyH Genome editing, Disease model, Animal development
"i ô M 5 Professor (Sp.Appt.) "3°F.&½žž Hidemasa BONO	G @G\Gn)...7Y GUGŠGM0Ž Ô ô% •jFp6ã\$ÍFøG^G2G8 GTG1G=GGFúG G 4G Ê µ+ OŽ Ô Development of database technologies for genome editing and functional genomics by bioinformatic approach.	G @G\Gn)...7YH G^G2G8G2G•G GGH 4G Ê µ+ OŽ Ô Genome editing, Bioinformatics, Functional genomics
(M 5 Visiting Professor û4SF. x™ Tomonobu M WATANABE	#Ô è#1ßG" 5 FéG œ Ú0£ •jFp6ã\$ÍFøFIG G G"#YFç Fi ç(ý+ %É'2FÚG G ÛG%#ø Â#Y Stem cell researches with development of optical measurement technologies to quantify biological phenomena, and medical/industrial applications of them	œ Ú8§ æ6-H (œ ÛH #Ô" @" @# ÛH ç(ý+ Optical spetctroscopy, quantitative biology, biophysics, stem cell

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F. \F. MF. (Academic Staff	%EF.F.'2F.F. ÆF.F. Research Fields	G;GSG;GSGW Keywords
ø M 5 Associate Professor (- `F. ! (Ö Akinori AWAZU	(ÊG%o(ý+ Fp#.1=#Õ" @ ÛH G@G\Gn · ÁFø4G Ê D šH g Á g BFp#.1=G%o 9,%É'2 Theoretical molecular and cell biology : Theoretical and experimental studies of genome dynamics, gene regulation, development, and morphogenesis.	#1ß1=\$x X#.GpGUGxG•G>H 9, GUGŠGM9Q · °GpGUGxG•G>H (G> z ¥ ° 9, Phenomenal mathematical modeling, Experiment data driver modeling, Experiments for
ø M 5 Associate Professor ±0YF. ¬ Isamu OHNISHI	&%Fp%Ê'2 F÷Fy>Ø>ìAy ÈFÔ – áFp X ÛAyFøFçFöFp X pF÷G F,8)z g#Õ è X#. ÛFp%Ê'2 FøFçFöF #Õ è#1ßG 4 Fb8)z g#1ßFúFöFöFöF, X#.&É ÛFp'g FÚG F, ÛG F '2FéG F' ÈFÔ – áFp X ÛFøFyF,Ay" @ !Fp · \$xFú X#.Gp G>G"/œFöFöF,FiG G" –Fú X#.\$xFú1Y1=H zFúF,GEG Fp X#.&É Û\$xFú S4 Fø µ+ Fb6ø €Fú @% FçF, X#.\$xF 9G" °G G H G"/œFÖFáFøF÷F, –Fp !" @G Fp0Z5 G 1 Á FyF,G_GwGWG;GEG9GyFú) 1=G" _FßG FÖFú q ·G" µ8)z g#Õ è X#. Û In my laboratory, we study and research mathematical science of Life phenomena and, moreover, nonlinear phenomena related to Life activity as a laboratory of Nonlinear mathematical Science related to Life, which is among mathematical science as ``mathematics in a broad dynamical mathematical modeling of phenomena, and based on that, mathematical discussions (mainly focusing on the relationship between the mathematical scientific structure and their functions of systems. It includes activities that lead to interpretations and explanations of the original things, sometimes paradoxical conclusions.	Nonlinear mathematical Science related to Life
ø M 5 Associate Professor "& F. ž µ Katsuo KATAYANAGI	.@SN2A/g / S4 Fp)Y*6\$×0Z ÒH _GSG;G•GKG•\$SG *ð 6ð4 Fp.@SN2AH >ð>ú>ì Ý Ý4Y(òH ;ä, GdGWG4#+,æ#ä (ò.@SN2AH Û" @#ä ¶. @SN2AH >ð>ð? q ðFp ·4#ä ¶G G•FúFúH H FÚG G Ç d.@SN2AFp?)z S4 ÒZ ÒFúG G ìFp0Z Á Three dimensional structure and function of Protein by protein X-ray-crystallography, and, Molecular evolution of protein derived from X-ray structure of artificial proteins.	GMG•G_G=2A/g / S4 H ?)z ÛH : U œ 3D structure of protein, X-ray crystallography, Synchrotron radiation
ø M 5 Associate Professor g.(F.&ñ Nen Saito	(ý+ ÆGNG2GXGmG=GGG 4 ìGNG2GXGmG=GGFúF G" P1ßFúH X#.GpGUGy0Z ÒG ±0d • X Í0£'iH µ" Û*f 0Z ÒFúFúG"/œFÖH #Õ" @" @#.G%o X#.#Õ" @ ÛFúFúFp 1=\$xFú%Ê'2G"/œFÖF¹ From the viewpoints of biophysics and mathematical biology, we aim to understand various biological phenomena by performing mathematical modeling , large scale numerical computation and machine learning analysis etc.	X#.GpGUGxG•G>H #Õ" @" @#. Û #Õ" @ Û mathematical modeling, biophysical theoretical biology
ø M 5 Associate Professor ••F. f Û Naoaki SAKAMOTO	G4GYFp\$ì#ÖG"GpGUGyFøFçFöH g Á g B4G ÊFp3? \$ì#Ö4#&ìFúFúFáG 4G ÊG%oG=G{GIGOG•G%o , /Fp · GGGzGŠGMŠFp 8#Ý µ SFÚFöFÖFö%Ê'2 Research for transcriptional regulation of morphogenetic genes, nuclear dynamics of gene, chromatin and chromosome during development, and mechanism of insulator activity, using the sea urchin development as a model.	G4GYFp\$ì#ÖH 3? xH > Æ · Á Sea urchin development, Transcription, Nuclear dynamics
MF. 5 Professor , ,6èF. 4 • Tetsushi SAKUMA	7 ™ ." @ ò8ð(ý+ G"#YFÖFiG@G\Gn)...7YFp ,0d •/j6ä\$ G@G\Gn)...7YG" Á#YFçFi Ç d3? x1*(FúG G FúG6Gb(G@G\Gn)...7YH G6GbG@G\Gn) GnG@G\Gn&É Û Development of new technology of genome editing using mammalian cultured cells; Development and application of artificial transcriptional control and epigenome editing systems repurposed from genome editing.	Genome editing, Epigenome editing, Systems genomics
ø M 5 Associate Professor â#ãF.-ñ ^ Hiroshi SHIMADA	œ œ B µ+ Fp0Z ÒFøH 4G Ê 5 šG%G?GmG9GyG^Gz G œ œ B "á ¥ V •/jFp6ä\$ì (-%)s /G^G2G8GFG5G[GEGGFp%Ê'2 Analysis of photosynthesis, and improving photosynthetic efficiency for greater yield by gene modification and chemical biology. Analysis of chloroplast biogenesis.	œ œ BH -(%)s /H G?GmG9GyG^ GFGŠ Photosynthesis, Chloroplast, Chemical biology

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Research Fields

G;GŚG}GŚGW
Keywords

M> >ì 5	%¼#āF· T j	GMG•G_G=2AGxG•4ß ìG%+:GxG•4ß ìFŪ6ōG G ' 4Ý(2AFp#Ō ì Ū\$×%Ê'2	_ 4)H 4Ý(òH &,,)
Professor	>í? ? !? ? ? ? F->ō>ŷ>ō>B&H	Biochemistry on enzymes and proteins which mediate protein phosphorylation and dephosphorylation.	H/HEHCHJH=HHF·HPHNH=HJH Neuron
M 5	%¼ NF· ā ù	G>GxG0(ŷ+ FŪ%T% FçFi&,,) . #. ŪG%o&,,) ~ ö Ū%Ê'2H "@2AH #" C ì Ū" @2AG >ù>ù>P>Ū>āFŪFŪH Z7āFŪG C G>GxG0(ŷ+ H w ì Ū" @2AH &,,)	
Professor	Yasuhiro ISHIHARA	Neuropharmacology and neurotoxicology on glial cells:	Fp Ÿ8íFø Y8i ô+!*ë4ßH >ō>ō>ìH Fp7€ š D Ý 1α

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	F. \F. MF. (Academic Staff	%EF.F.2F.F. ZEF.F. Research Fields	G;GSG;GSGW Keywords
(M 5 Visiting Professor	û4SF. x TM Tomonobu M WATANABE	#Ō è# '1ßG" 5 FéG œ Ū0£ •/iFp6ä\$îFøFIG G G"#YFŌ Fi ζ(ý+ %É'2FUG G ŪG%#Ø Á#Ý Stem cell researches with development of optical measurement technologies to quantify biological phenomena, and medical/industrial applications of them.	œ Ū8§ æ6-H (œ ŪH #Ō"@#@# ŪH ζ(ý+ Optical spctroscopy, quantitative biology, biophysics, stem cell
ø M 5 Associate Professor	-]F. J ? ? ? ? ? ? F.>ð>ó>í? >	g#Ō8@Fp' (iFø#" C4: ÁFú6ðG G G@G\Gn4 ì Ū\$×%É Genome evolution underlying speciation and environmental adaptation of amphibians.	2j#Ō8@H 4: Á4 ìH G @G\GmG=C Amphibians, Adaptive evolution, Genomics
ø M 5 Associate Professor	V5 F. ¼ Masaru UENO	%? >#Ō"@FpGTG{GoG0}T â μ SG%>ð>ú>í Ÿ Ÿ μ SFp Fb *iG% \$'6ð4 ì. G Fp Á#Ý%É'2 Study on molecular mechanisms of telomere maintenance and DNA repair and their applications for development of anti-cancer and anti-ageing agents.	GTG{GoG0H FUG#H *i Telomere, Cancer, Aging
ø M 5 Associate Professor	ß \$F.*>(ê Ê Misako OKUMURA	œ %±GoG9GYGHGnFp0Ž Á>Ū>ì/2#' ° • (òFp (Ê ò% Á Molecular mechanism of phototransduction. Molecular mechanism of phenotypic plasticity.	Fp0Ž)z.x>ð>ì œ w />ð>ì/2#' ° • (ò Nematode, Photoreceptor, Phenotypic plasticity
ø M 5 Associate Professor	, (F. M0d Kazunori KUME	(ý+ Fp μ+ G" -0ÉFéG (ý+ S4 H G8GyG:G[GwG (ý+ ò FùH Fp D š μ SFú6ðFéG %É'2 Study on the control mechanisms of cell structure (organelles and cell polarity etc.) which ensures cellular functions.	(ý+ S4 H G8GyG:G[GwH (ý+ ò Cell structure, Organelle, Cell polarity
ø M 5 Associate Professor	••F. f Ū Naoaki SAKAMOTO	G4GYFp\$î#ŌG"GpGUGyFøFçFøH g Á g B4G ÊFp3? \$î#Ō4#&iFúFúFáG 4G ÉG%G=G{GIGOG•G% , /Fp GGGzGŠGMGŠFp 8#Ý μ SFúFðFøFø%É'2 Research for transcriptional regulation of morphogenetic genes, nuclear dynamics of gene, chromatin and chromosome during development, and mechanism of insulator activity, using the sea urchin development as a model.	G4GYFp\$î#ŌH 3? xH > AE · Á Sea urchin development, Transcription, Nuclear dynamics
ø M 5 Associate Professor	iF. Á&; Takuma SUGI	¶Fø7Ý KFp/œ .G" -4ÁFéG "@#. NFp%É'2>ð>ì&, G[G G=*i μ SFp%É'2 Behavioral systems biology and neural network aging.	/œ .->ð>ì&, G[GQGVG}GŠG=*i •/j6ä\$ì>ð Behavior, Imaging, Neural network aging
ø M 5 Associate Professor	! #ŌF.FäFøFø Kozue HAMAO	."@(ý+ Fp(ý+ 9μ A D šFø(ý+ (/äFp (Ê μ SFú6ðFéG %É'2 Molecular mechanisms of cytoskeletal regulation and cell division in animal cells.	(ý+ 9μ AH (ý+ (/äH (ý+ 2A (/ä Cytoskeleton, Mitosis, Cytokinesis
ø M 5 Associate Professor	•#äF. W ... Masayuki YOSHIDA	FäFäG Fp#Ō"@ Ū\$× ò% Fú6ðFéG %É'2 Biological basis of emotion, learning, and mind in animals.	."@ °#H _ .H &, &É Ū Animal psychology, Emotion, Neuroscience

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F. MF. (Academic Staff		%EF.F.2F.F. ÆF.F. Research Fields	G;GSG;GSGW Keywords
"F. M Assistant	9x «F.F. Ê Haruko TAKAHASHI	#Ō / ¥>Ō? ? >ì"? ? ? ? >Ō>ß -\$xFÜG#))ÉGpGUGyF G=GGGUGŠGMG"#YFŌF)+ œ\$×0Ž ŌFûG G H FÜG# Gnf0Ž ÂFø \$ª ø% Â#Ý Analysis of the malignant mechanism of cancer and its therapeutic application by integrated analysis using 3D in vitro cancer tissue models, images and omics data.	>ß -? ? >ì"? ? ? ? GpGUGy>Ø C>Ø>ì FÜG# Ý 3D in vitro model, Tumor microenvironment, Anti-cancer
"F. M Assistant	.]F. A • Masashi YUKAWA	G@G\Gnfó ö – âFû ²8rFú π `ö g B μ SFû6öFéG %Ê '2Fø w#Y#Ō#. q ö"@2AFp6ä\$Í Our research focuses on the molecular mechanisms to establish and maintain a bipolar spindle structure, which is essential for proper chromosome segregation. We also aim to implement our findings towards the development of novel drugs and therapeutic technologies by which to build and sustain healthy aging society.	(ý+ Ø ‡H , / (4ÄH >ì(ý+ 9μ A Cell cycle, Chromosome segregation, Cytoskeleton