

Degree Programs in Comprehensive Human Sciences

<Doctoral Program in Neuroscience>

Field of Research	Faculty	Detailed Description of Research Field
Neuroscience	ABE Takashi	• Neurobehavioral consequences of sleep loss • Mitigating performance deficits from sleep loss • Understanding the psychological functions of sleep • Developing novel methods for measuring sleep and alertness
	ARAI Tetsuaki	• Early diagnosis of dementia using biomarkers • Clinical study of dementia prevention • Clinicopathological, biochemical and neuroimaging study of dementia • Clinical study of presenile dementia
	IWATA Suguru	• Molecular biology of motor proteins in neurite • Molecular biology of intracellular transport system in microglia • Development of a novel morphological analysis by scatterometry
	OISHI Yo	• Short-sleeper mice to elucidate sleep function and mechanisms • Molecular mechanisms shaping the characteristics of sleep • Analyzing sleep mechanisms through pharmacological approaches
	OTA Miho	• Relationship between the aphasia and the regional brain function in dementia revealed by magnetic resonance imaging • Psychiatric disease-related brain change revealed by magnetic resonance imaging
	KUNIMATSU Jun	• The effect of respiration on cognitive function • The neural mechanisms for social behavior in primates • Role of the cerebellum in higher motor control
	KOGANEZAWA Tadachika	• Study on the neural regulation of the cardiovascular system • Study on the neural regulation of the respiratory system • Study on the neural regulation based cardiovascular and respiratory diseases
	SAKURAI Takeshi	• Elucidation of physiological roles of novel neuropeptides • Deciphering the neuronal mechanisms that regulate sleep/wakefulness states • Revealing neuronal pathways that regulate social behavior and social distance • Analyzing the neuronal mechanisms that control regulated hypometabolism
	SASAKI Tetsuya	• Functional cortical area formation and development • Primate-specific neural circuit formation and the involvement in pathophysiology of psychiatric disorders
	SAMBAI Ami	• Processing of reading, writing and language and its development • Study of cognitive mechanisms of developmental dyslexia and developmental language disorders • Clinical study of developmental dyslexia and developmental language disorders

	TAKAHASHI Aki	• Neuroscience, behavior genetics, and neuroimmunological approaches to study biological mechanism of animal behavior including emotion and social behaviors (especially aggressive behavior) using mouse
	TAKEI Yosuke	• Analysis of molecular pathology of schizophrenia and autism spectrum disorder • Analysis of mechanism of intracellular transport in neurons
	NAKATA Mariko	• Neuroendocrine basis of social and emotional behavior (mice) • Neural basis of group behavior (mice)
	HIRANO Arisa	• Molecular biology and neuroscience on oscillatory mechanism of the circadian clock in mice • Neural network involved in regulation of circadian rhythms (sleep/wake, endocrine, body temperature) in mice • Molecular mechanism of non-visual photo-reception in mouse retina
	HONJOH Sakiko	• Synaptic plasticity and sleep • Neural circuits underlying NREM sleep specific brain activity
	YAMADA Kazuo	• Behavioral neuroscience on neural mechanisms of learning, memory, and forgetting using rodents • Behavioral neuroscience on rodents' models of post-traumatic stress disorder (PTSD) and drug dependence
	YAMADA Hiroshi	• Neural mechanisms for economic decision makings • How neural circuitry employees computations • How the motivation and willingness to act are emerged in the brain
	YAMANAKA Katsuo	• Psychosocial approaches for dementia care • Psychological assessments for dementia care • Social attitudes to persons living with dementia
	YUKI Shoko	• Neural, developmental, and pathological mechanisms of metacognition in rats: behavioral experiments, electrophysiology, and neural circuit recording • Neural mechanisms of behavioral optimization and metacognition in marmosets: behavioral experiments and neural recordings • Cognitive and neural mechanisms of metacognition-based behavioral optimization in humans: behavioral experiments, fMRI, and computational modeling
	LAZARUS Michael	• Understanding the link between sleepiness and motivation by exploring mesolimbic glia-neuron interactions • Sleep circuits as potential therapeutic targets for insomnia • Adenosine A2A receptor function in schizophrenia • Neuro-immune communication in sleep disorders: mechanisms, diagnostic and therapeutic relevance

[Cooperative Graduate School]

Field of Research	Faculty	Detailed Description of Research Field
Neuroscience (Cooperative Graduate School)	IWAKI Sunao (AIST)	• Quantitative evaluation of subjective experience using non-invasive neuroimaging techniques • Development of multimodal neuroimaging to visualize and model neural networks in the human brain
	KATAHIRA Kentaro (AIST)	• Computational modeling of behavioral data • Experimental and computational research on human behavior selection • Development of statistical methods for analyzing individual differences
	TAKEDA Yuji (AIST)	• Research on characteristics of human visual attention and memory • Development of psychophysiological indices of cognitive states
	YOSHIE Michiko (AIST)	• Psychophysiological mechanisms underlying performance anxiety • Links between emotion perception/regulation and motor actions • Improving fine motor skills such as music performances

(AIST) National Institute of Advanced Industrial Science and Technology

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