

# Degree Programs in Comprehensive Human Sciences

## <Master's Program in Neuroscience>

Field of Research	Faculty	Detailed Description of Research Field
Neuroscience	ABE Takashi	<ul style="list-style-type: none"> <li>• Neurobehavioral consequences of sleep loss</li> <li>• Mitigating performance deficits from sleep loss</li> <li>• Understanding the psychological functions of sleep</li> <li>• Developing novel methods for measuring sleep and alertness</li> </ul>
	AYABE Saho	<ul style="list-style-type: none"> <li>• Human olfactory perception/cognition and odor hedonics</li> <li>• Haptic space perception/cognition and perceptual learning</li> <li>• Perception/cognition of facial expressions</li> </ul>
	ARAI Tetsuaki	<ul style="list-style-type: none"> <li>• Early diagnosis of dementia using biomarkers</li> <li>• Clinical study of dementia prevention</li> <li>• Clinicopathological, biochemical and neuroimaging study of dementia</li> <li>• Clinical study of presenile dementia</li> </ul>
	OISHI Yo	<ul style="list-style-type: none"> <li>• Short-sleeper mice to elucidate sleep function and mechanisms</li> <li>• Molecular mechanisms shaping the characteristics of sleep</li> <li>• Analyzing sleep mechanisms through pharmacological approaches</li> </ul>
	OTA Miho	<ul style="list-style-type: none"> <li>• Relationship between the aphasia and the regional brain function in dementia revealed by magnetic resonance imaging</li> <li>• Psychiatric disease-related brain change revealed by magnetic resonance imaging</li> </ul>
	OKAZAKI Shinji	<ul style="list-style-type: none"> <li>• Psychophysiological study of attention in children with intellectual and developmental disabilities</li> <li>• Developmental neuropsychological study of assessment and intervention for the person with developmental disabilities</li> </ul>
	KUNIMATSU Jun	<ul style="list-style-type: none"> <li>• The effect of respiration on cognitive function</li> <li>• The neural mechanisms for social behavior in primates</li> <li>• Role of the cerebellum in higher motor control</li> </ul>
	KOGANEZAWA Tadachika	<ul style="list-style-type: none"> <li>• Study on the neural regulation of the cardiovascular system</li> <li>• Study on the neural regulation of the respiratory system</li> <li>• Study on the neural regulation based cardiovascular and respiratory diseases</li> </ul>
	SAKAGUCHI Masanori	<ul style="list-style-type: none"> <li>• Functional significance of sleep in memory</li> <li>• Elucidation and application of neuronal plasticity</li> <li>• Developing a new therapy for PTSD (clinical study)</li> </ul>
	SAKURAI Katsuyasu	<ul style="list-style-type: none"> <li>• Understanding neural mechanisms underlying desire sleep</li> <li>• Understanding neural mechanisms underlying psychiatric disorders</li> </ul>

SAKURAI Takeshi	<ul style="list-style-type: none"> <li>▪ Elucidation of physiological roles of novel neuropeptides</li> <li>▪ Deciphering the neuronal mechanisms that regulate sleep/wakefulness states</li> <li>▪ Revealing neuronal pathways that regulate social behavior and social distance</li> <li>▪ Analyzing the neuronal mechanisms that control regulated hypometabolism</li> </ul>
SASAKI Tetsuya	<ul style="list-style-type: none"> <li>▪ Functional cortical area formation and development</li> <li>▪ Primate-specific neural circuit formation and the involvement in pathophysiology of psychiatric disorders</li> </ul>
SAMBAL Ami	<ul style="list-style-type: none"> <li>▪ Processing of reading, writing and language and its development</li> <li>▪ Study of cognitive mechanisms of developmental dyslexia and developmental language disorders</li> <li>▪ Clinical study of developmental dyslexia and developmental language disorders</li> </ul>
TAKAHASHI Aki	<ul style="list-style-type: none"> <li>▪ Neuroscience, behavior genetics, and neuroimmunological approaches to study the biological mechanism of animal behavior including emotion and social behaviors (especially aggressive behavior) using mouse</li> </ul>
TAKEI Yosuke	<ul style="list-style-type: none"> <li>▪ Analysis of molecular pathology of schizophrenia and autism spectrum disorder</li> <li>▪ Analysis of mechanism of intracellular transport in neurons</li> </ul>
NAKATA Mariko	<ul style="list-style-type: none"> <li>▪ Neuroendocrine basis of social and emotional behavior (mice)</li> <li>▪ Neural basis of group behavior (mice)</li> <li>▪ Fatigue and Neurodevelopmental disorders (mice and humans)</li> </ul>
PASQUALOTTO Achille	<ul style="list-style-type: none"> <li>▪ Multisensory/visual/auditory/haptic cognition in humans</li> <li>▪ Memory modulation via non-invasive brain stimulation in humans</li> <li>▪ Human spatial cognition</li> </ul>
HIRANO Arisa	<ul style="list-style-type: none"> <li>▪ Molecular biology and neuroscience on oscillatory mechanism of the circadian clock in mice</li> <li>▪ Neural network involved in regulation of circadian rhythms (sleep/wake, endocrine, body temperature) in mice</li> <li>▪ Molecular mechanism of non-visual photo-reception in mouse retina</li> </ul>
HONJOH Sakiko	<ul style="list-style-type: none"> <li>▪ Synaptic plasticity and sleep</li> <li>▪ Neural circuits underlying NREM sleep specific brain activity</li> </ul>
YAMADA Kazuo	<ul style="list-style-type: none"> <li>▪ Behavioral neuroscience on neural mechanisms of learning, memory, and forgetting using rodents</li> <li>▪ Behavioral neuroscience on rodents' models of post-traumatic stress disorder (PTSD) and drug dependence</li> </ul>
YAMADA Hiroshi	<ul style="list-style-type: none"> <li>▪ Neural mechanisms for economic decision makings</li> <li>▪ How neural circuitry employees computations</li> <li>▪ How the motivation and willingness to act are emerged in the brain</li> </ul>
YAMANAKA Katsuo	<ul style="list-style-type: none"> <li>▪ Psychosocial approaches for dementia care</li> <li>▪ Psychological assessments for dementia care</li> <li>▪ Social attitudes to persons living with dementia</li> </ul>

	LAZARUS Michael	<ul style="list-style-type: none"> <li>▪ Understanding the link between sleepiness and motivation by exploring mesolimbic glia-neuron interactions</li> <li>▪ Sleep circuits as potential therapeutic targets for insomnia</li> <li>▪ Adenosine A2A receptor function in schizophrenia</li> <li>▪ Neuro-immune communication in sleep disorders: mechanisms, diagnostic and therapeutic relevance</li> </ul>
--	-----------------	--

[Cooperative Graduate School]

Field of Research	Faculty	Detailed Description of Research Field
Neuroscience (Cooperative Graduate School)	IWAKI Sunao (AIST)	<ul style="list-style-type: none"> <li>▪ Quantitative evaluation of subjective experience using non-invasive neuroimaging techniques</li> <li>▪ Development of multimodal neuroimaging to visualize and model neural networks in the human brain</li> </ul>
	KATAHIRA Kentaro (AIST)	<ul style="list-style-type: none"> <li>▪ Computational modeling of behavioral data</li> <li>▪ Experimental and computational research on human behavior selection</li> <li>▪ Development of statistical methods for analyzing individual differences</li> </ul>
	TAKEDA Yuji (AIST)	<ul style="list-style-type: none"> <li>▪ Research on characteristics of human visual attention and memory</li> <li>▪ Development of psychophysiological indices of cognitive states</li> </ul>

(AIST) National Institute of Advanced Industrial Science and Technology

April 2025