Program

The 72nd Annual Meeting of the Japanese Association for Laboratory Animal Science
May 22 (Thu) 13:30–15:30 1st Venue: Convention Hall (Convention Center 3F Hall A1-A3)

Chairperson: Atsuo Ogura (RIKEN BioResource Research Center)

■ Honorable Contribution Award

Dr. Takashi Agui (Professor Emeritus, Hokkaido University)

■ Encouragement Award

L1-1 Establishment of a novel severely immunodeficient diabetic mouse model for xenogeneic islet cell transplantation

◯ Kenta Nakano

National Center for Global Health and Medicine

L1-2 Development of non-invasive devices that support the 3Rs in laboratory animal research

◯ Terumi Yurimoto

Central Institute for Experimental Medicine and Life Science

■ 2024 Best Paper Award of Experimental Animals

Ivabradine ameliorates cardiomyopathy progression in a Duchenne muscular dystrophy model rat

Ryota Tochinai, Koichi Kimura, Takeru Saika, Wataru Fujii, Hiroyuki Morita, Koki Nakanishi, Yoshiharu Tsuru, Shin-ichi Sekizawa, Keitaro Yamanouchi, Masayoshi Kuwahara

Establishment and visual analysis of CBA/J-*Pde6b*$^{Y347Y/Y347X}$ and C3H/HeJ-*Pde6b*$^{Y347Y/Y347X}$ mice

Miyuki Shindo, Miho Terao, Shuji Takada, Minoru Ichinose, Emiko Matsuzaka, Tadashi Yokoi, Noriyuki Azuma, Seiya Mizuno, Hideki Tsumura

Validation of the anesthetic effect of a mixture of remimazolam, medetomidine, and butorphanol in three mouse strains

Masaki Watanabe, Yuko Nikaido, Nobuya Sasaki

Plenary Lecture 1
May 21 (Wed) 13:30–14:30 1st Venue: Convention Hall (Convention Center 3F Hall A1-A3)

Chairperson: Shizuko Nagao (Fujita Health University)

PL-1 Drug discovery for kidney diseases using iPSC-based kidney organoids and animal models

◯ Kenji Osafune

Center for iPS Cell Research and Application (CiRA), Kyoto University

Plenary Lecture 2
May 22 (Thu) 15:45–16:45 1st Venue: Convention Hall (Convention Center 3F Hall A1-A3)

Chairperson: Shizuko Nagao (Fujita Health University)

PL-2 Ultrahigh field MRI: to revolutionize *in vivo* experimental medicine

◯Makoto Suematsu[1,2)]

[1)]Central Institute for Experimental Medicine and Life Science (CIEM),
[2)]Keio University

Symposium 1
May 21 (Wed) 9:15–11:35 2nd Venue: Second Hall (Main Hall 3F Conference Hall)

"Let's Learn about Adeno-Associated Virus! Research and Test Use and Management at Laboratory Animal Facilities"

Chairpersons: Yoko Miyamoto (Kyowa Kirin)
Shinichiro Nakamura (Azabu University)

Adeno-associated virus (AAV) is used as a viral vector in medical science and gene therapy. In cases of applying to animal experiments, diffusion prevention including the escape of inoculated animals and disposal of the dead body are required. However, specialists of animal experiments have little opportunity to learn the correct knowledge about AAV. Furthermore, how to manage diffusion prevention for AAV in animal rooms differs each facility. This symposium will be given lectures on the basic knowledge of AAV and actual operations of research use in an academia and a private company. Then, the non-clinical tests and its related adverse events during development of gene therapies used AAV will be introduced.

S1-1 Biological properties of adeno-associated virus (AAV) and its use as a vector: from basic to applied

◯Takashi Okada

The Institute of Medical Science, The University of Tokyo

S1-2 The use of adeno-associated virus vectors in non-human primate neuroscience

◯Ken-ichi Inoue

Center for the Evolutionary Origins of Human Behavior, Kyoto University

S1-3 Management of animal experiments using adeno-associated virus vectors in the laboratory animal facility of Shinshu University

◯Hitoki Yamanaka

Research Center for Advanced Science and Technology, Shinshu University

S1-4 Actual situation of AAV animal experiments (private companies)

◯Manabu Shimonishi

Technical Development Div., KAC Co., Ltd.

S1-5 Non-clinical safety evaluation for the development of adeno-associated viral vector products

◯Misaki Naota

Pharmaceuticals and Medical Devices Agency (PMDA)

Symposium 2
May 21 (Wed) 14:45–17:15 1st Venue: Convention Hall (Convention Center 3F Hall A1-A3)

"Frontiers in Developmental Engineering with Experimental Animals"

Chairpersons: Toshihiro Kobayashi (National Institute for Physiological Sciences)
Satoru Iwata (Chubu University)

In the half-century since the first birth of transgenic mice with exogenous genes, developmental engineering techniques have made remarkable progress, and their contribution to laboratory animal research is immeasurable. In this symposium, each young investigator will introduce the cutting-edge technologies of developmental engineering and the latest research using unique animal models created by these technologies. Dr. Iwata and Dr. Miura will introduce novel techniques for producing genetically engineered mice, such as chromosomal rearrangement and targeted transgenesis. Dr. Miyawaki and Dr. Isotani will introduce the development and use of model mice with xenogeneic genes and organs. With reproduction as the key word, Dr. Inoue and Dr. Kobayashi will present the forefront of reproductive endocrine research and *in vitro* gametogenesis using genetically modified rats. We hope that this symposium will lead to the creation of new ideas through the sharing of new technologies, experimental techniques and knowledge.

S2-1 Advances in chromosomal engineering focused on genome stability

◯ Satoru Iwata[1,2,3,4]

[1]Center for Educ. in Lab. Animal Res., Chubu Univ., [2]Dept. of Biomed. Sci., Col. of Life and Sci., Chubu Univ., [3]Col. of Biosci. and Biotech., Chubu Univ., [4]Center for Math. Sci. and Artif. Intell., Chubu Univ.

S2-2 Advancement of integrase-based mouse targeted transgenesis

◯ Hiromi Miura[1], Ayaka Nakamura[2], Gurumurthy B Channabasavaiah[3], Masato Ohtsuka[1]

[1]Department of Molecular Life Science, Division of Basic Medical Science and Molecular Medicine, Tokai University School of Medicine,
[2]Life Science Support Center, Tokai University, [3]University of Nebraska Medical Center

S2-3 Research on canine genetic diseases using genome-edited mice

◯ Shingo Miyawaki[1,2]

[1]Laboratory of Veterinary Surgery, Faculty of Applied Biological Sciences, Gifu University,
[2]Center for One Medicine Innovative Translational Research (COMIT), Institute for Advanced Study, Gifu University

S2-4 Generation of organs in interspecies chimeras using the tetraploid complementation method

◯ Ayako Isotani[1], Yamato Murata[1], Yu Kawasaki[1], Shunsuke Yuri[1,2]

[1]Nara Institute of Science and Technology, [2]National Center for Geriatrics and Gerontology

S2-5 Cutting-edge research on the central mechanism underlying ovulation using genetically modified rats

◯ Naoko Inoue, Yoshihisa Uenoyama, Hiroko Tsukamura

Graduate School of Bioagricultural Sciences, Nagoya University

S2-6 Understanding and reconstitution of germline development in rats

◯ Toshihiro Kobayashi[1,2]

[1]National Institute for Physiological Science, [2]The Institute of Medical Science, The University of Tokyo

Symposium 3

May 21 (Wed) 14:45–17:15 2nd Venue: Second Hall (Main Hall 3F Conference Hall)

"Research Report on the Current Status of Demand and Supply for Cynomolgus Monkeys and Other Non-Human Primates in Japan, Estimation of Deficit, and Future Considerations and Recommendations"

Chairpersons: Kyoko Shioya (National Cerebral and Cardiovascular Center)
Michiko Hashimoto (Astellas Pharma Inc.)

Cynomolgus monkeys and other non-human primates have been used in the research and development of vaccines, pharmaceuticals, and other medical products, providing significant benefits to our health. The COVID-19 pandemic has increased the urgency of vaccine and treatment drug development, leading to a greater demand for cynomolgus monkeys and other non-human primates used in basic research. Additionally, during this time, China, a major supplying country, stopped exporting cynomolgus monkeys, resulting in stagnation in the distribution of these animals in Japan, causing price hikes and supply shortages. This situation has led to concerns raised by the Japanese Society of Laboratory Animal Science that research and pharmaceutical development, which require cynomolgus monkeys, have been hindered.

In response, the Japanese Society of Laboratory Animal Science established a working team to share information and address the issue. The working team, supported by the Health and Labour Sciences Special Research Project, has compiled the information and is now presenting the findings in this report.

S3-1 Current status and impact of cynomolgus monkey supply: findings from the COVID-19 pandemic and future challenges

◯Mutsumi Suzuki

Translational Research Labs, Research Division, Kyowa Kirin Co., Ltd.

S3-2 Global supply and demand for laboratory macaques

◯Takuro Ikeda

RIKEN Center for Biosystems Dynamics Research

S3-3 Human ADPKD modeling with genetically modified nonhuman primates

◯Masatsugu Ema

RCALS, Shiga University of Medical Science

S3-4 Proposal for the establish of a domestic reproduction and supply system for cynomolgus monkeys in Japan

◯Tadashi Sankai

National Institutes of Biomedical Innnobation, Health and Nutrition

Symposium 4
May 21 (Wed) 14:45–17:05 **3rd Venue (Main Hall 3F Conference Room 3)**

"2025 JALAS-KALAS Joint Symposium"

Chairpersons: Sun Shin Yi (College of Veterinary Medicine, Konkuk University)
Atsushi Yoshiki (RIKEN Bioresource Research Center)

Life science research has made remarkable progress with the enrichment of genomic information from humans and model animals, along with the emergence of cutting-edge genome manipulation technologies and comprehensive gene expression analysis techniques at the single-cell level. In addition, vast amounts of analytical datasets accumulated in public databases are being integrated through bioinformatics technologies, leading to the generation of new knowledge through the utilization of machine learning and artificial intelligence.

This JALAS-KALAS Joint Symposium features presentations by four distinguished researchers, two each recommended by JALAS and KALAS, introducing cutting-edge research in molecular biology and bioinformatics applications in laboratory animal science. The presentations span innovative computational tools for analyzing large-scale knockout mouse phenotypes, advanced CRISPR-based functional genomics in cancer research, enhanced mouse genome variation databases for biomedical research, and novel machine learning approaches for discovering proteomic biomarkers in neurodegenerative disorders.

The symposium highlights the integration of diverse technological approaches, including CRISPR genome editing, single-cell sequencing, structural variation analysis, and machine learning, to advance our understanding of disease mechanisms and therapeutic strategies. These presentations demonstrate the power of combining molecular approaches with computational analyses in modern laboratory animal science, underpinning more precise and reproducible research outcomes using animals.

S4-1 TSUMUGI: a novel tool for identifying gene modules from KO mouse phenotypic data

○ Akihiro Kuno[1,2)], Taito Taki[3)], Seiya Mizuno[2)]

[1)]Department of Anatomy and Embryology, Institute of Medicine, University of Tsukuba,
[2)]Laboratory Animal Resource Center, University of Tsukuba,
[3)]Ph.D Program in Human Biology, University of Tsukuba

S4-2 Integrating advanced genomic platforms for functional genomics in mouse models

○ Jun Won Park

Department of Laboratory Animal Medicine, College of Veterinary Medicine, Seoul National University

S4-3 Enhancements of the mouse genome variation database MoG$^+$ for supporting advanced biomedical research

○ Toyoyuki Takada[1)], Daiki Usuda[1)], Tatsuya Kushida[1)], Nobutaka Mitsuhashi[2)], Yuki Moriya[2)], Hirokazu Chiba[2)], Takanori Amano[3)], Masaru Tamura[4)], Atsushi Yoshiki[5)], Atsushi Toyoda[6)], Hideki Noguchi[7)], Takeya Kasukawa[8)], Hiroshi Masuya[1)]

[1)]Integrated Bioresource Information Division, RIKEN BRC, [2)]Database Center for Life Science, ROIS,
[3)]Next Generation Human Disease Model Team, RIKEN BRC,
[4)]Mouse Phenotype Analysis Division, RIKEN BRC, [5)]Experimental Animal Division, RIKEN BRC,
[6)]Comparative Genomics Laboratory, NIG, [7)]Center for Genome Informatics, ROIS,
[8)]Laboratory for Large-Scale Biomedical Data Technology, RIKEN IMS

S4-4 Machine learning-based discovery of proteomic biomarkers for neurodegenerative disorders using animal models

○ Sun Shin Yi

Department of Anatomy, College of Veterinary Medicien, Konkuk University

Symposium 5
May 22 (Thu) 9:15–11:45 1st Venue: Convention Hall (Convention Center 3F Hall A1-A3)

"Exploring Mechanisms of Brain Dysfunction Using Disease Animal Models"

Chairpersons: Toshiaki Kume (University of Toyama)
Taku Nagai (Fujita Health University)

Animal models of disease are defined as animals that have been genetically or environmentally engineered to mimic specific diseases. They are considered essential tools in the research of human disease. In this symposium, five researchers will present the latest advances of their studies using animal models of brain dysfunction, including dementia, stroke, depression, schizophrenia, and drug addiction. They will also propose how new findings obtained by using these animal models can contribute to the development of treatments and prevention of diseases. Furthermore, the symposium will address future research and technological challenges and discuss prospects for animal model disease research.

S5-1 Elucidating Aβ structures and toxicity offers insights into therapies for Alzheimer's disease

◯ Toshiaki Kume

University of Toyama

S5-2 Exploring cellular responses and therapeutic targets in ischemic brain injury

◯ Mika Takarada-Iemata, Osamu Hori

Department of Neuroanatomy, Graduate School of Medical Sciences, Kanazawa University

S5-3 Prevention, diagnosis and treatment strategies using animal models of depression

◯ Akihiro Mouri[1,3,4], Kazuo Kunisawa[1,3,4], Toshitaka Nabeshima[2,3,4]

[1)]Department of Regulatory Science for Evaluation and Development of Pharmaceuticals and Devices, Researh Promotion Unit, Fujita Health University Graduate School of Medical Sciences,
[2)]Laboratory of Health and Medical Science Innovation (HMSI), Fujita Health University Graduate School of Medical Science,
[3)]International Center for Brain Science (ICBS), Fujita Health University,
[4)]Japanese Drug Organization of Appropriate Use and Research

S5-4 Study on functional role of glial glutamate transporter in psychobehaviors of mice

◯ Mizuki Uchida[1,2]

[1)]Department of Hospital Pharmacy, Nagoya University Hospital,
[2)]Division of Clinical Sciences and Neuropsychopharmacology, Faculty and Graduate School of Pharmacy, Meijo University

S5-5 Development of therapeutic drug using animal models of addiction

◯ Taku Nagai

Division of Behavioral Neuropharmacology, International Center for Brain Science (ICBS), Fujita Health University

Symposium 6
May 22 (Thu) 9:15–11:45 2nd Venue: Second Hall (Main Hall 3F Conference Hall)

"Model Animals for Renal Diseases: Development and Challenges"

Chairpersons: Shigeru Kakuta (The University of Tokyo)
Atsushi Yoshiki (RIKEN Bioresource Research Center)

In this symposium, we will share research results from multiple approaches, including the development of genetically modified mice and renal function analysis, pathological evaluation of disease variant-introduced model mice, drug discovery research using Alport syndrome model mice, drug development targeting AIM for progressive kidney disease using cats, and 3D ultrastructural analysis of glomeruli using volume electron microscopy. These studies aim to bridge basic research to clinical applications, from elucidating disease mechanisms to developing therapeutic approaches. We would like to discuss the challenges and future prospects of research using model animals from a broad perspective.

S6-1 Development of model mice for elucidating kidney diseases

◯Nobuya Sasaki

School of Veterinary Medicine, Kitasato University

S6-2 Renal phenotyping and pathological evaluation of disease-variant knock-in mice

◯Takanori Amano

Next Generation Human Disease Model Team, RIKEN BioResource Research Center

S6-3 Alport syndrome model mice and its application for drug development

◯Hirofumi Kai

Faculty of Pharmaceutical Sciences, Kumamoto University

S6-4 Drug development by AIM targeting renal failure using feline model

◯Toru Miyazaki

The Institute for AIM Medicine

S6-5 3D ultrastructural analysis of renal glomerulus using volume electron microscopy

◯Koichiro Ichimura

Department of Anatomy and Life Structure, Juntendo University Graduate School of Medicine

Symposium 7
May 23 (Fri) 9:15–11:15 1st Venue: Convention Hall (Convention Center 3F Hall A1-A3)

"Overview of Animal Welfare Regulations and Laboratory Animal Management in Europe and the United States"

Chairpersons: Shigiko Takei (Ina Research Inc.)
Hidenori Watanabe (JT Creative Service Inc.)

Currently, discussions on revising the Animal Welfare and Management Act are progressing domestically. The main points of debate are the mandatory implementation of the 3Rs and the classification of facilities that breed and keep laboratory animals as animal handling businesses. These are being considered as systems aimed at promoting the welfare of laboratory animals and improving the transparency of animal experiments. So, what kind of systems are being introduced overseas? We will have an animal law expert introduce the handling of the 3Rs in legislation and systems for improving transparency, focusing on Europe and the United States.

Next, we will cover the trends of overseas pharmaceutical companies regarding animal welfare. Many of you may know that laws and regulations concerning animal welfare vary by country and region. Regarding the welfare of laboratory animals, there are several international standards, but in some regions or countries, responses beyond international standards are required. We will introduce the efforts (Marseille Declaration) that pharmaceutical companies conducting animal experiments in multiple countries and regions are making to meet their desired animal welfare standards.

Finally, we will consider the impact of initiatives by overseas pharmaceutical companies, such as the Marseille Declaration, on Japan. Contract Research Organizations (CROs) are particularly susceptible to these influences. We will have an introduction to how domestic CROs are responding to such trends of overseas pharmaceutical companies, including specific breeding and management methods.

S7-1 Animal welfare laws related to laboratory animals in Europe and the United States: emphasizing the 3Rs and transparency

◯Moe Honjo

Faculty of Environmental Science, Nagasaki University

S7-2 Marseille Declaration: animal welfare standard demonstrated by global pharmaceutical companies

◯Takehito Isobe

Research Division, CHUGAI Pharmaceutical Co., Ltd.

S7-3 An introduction to European-standard animal care at a CRO

◯Yusuke Torikai

Drug Safety Research Laboratories, SNBL, Ltd.

Symposium 8

May 23 (Fri) 9:15–11:35 2nd Venue: Second Hall (Main Hall 3F Conference Hall)

"The Cutting Edge of Fruit Fly Research Beyond Classical Genetics and Developmental Biology"

Chairpersons: Hayato Sasaki (Kitasato University)
Yuki Naganuma (Astellas Pharma Inc.)

Despite being a well-known model organism featured in high school biology textbooks, many people may not be familiar with the characteristics and research applications of the fruit fly (*Drosophila*). The *Drosophila* model has long been utilized in classical genetics and developmental biology, but its applications now extend to a wide range of fields. Moreover, the use of *Drosophila* in life science research contributes to the 3Rs by serving as an alternative to mammalian models. This symposium aims to provide an opportunity to deepen understanding of the usefulness and applications of *Drosophila* by presenting research conducted in various fields, from molecular biology to drug discovery.

S8-1 Scaling of hormone levels with body size in the fruit fly *Drosophila*

◯ Takashi Nishimura

IMCR, Gunma University

S8-2 Towards understanding tissue homeostasis and environmental responses using the *Drosophila* adult midgut

◯ Yuichiro Nakajima

Graduate School of Pharmaceutical Sciences, The University of Tokyo

S8-3 *Drosophila* unveiling new frontiers in cancer research

◯ Masahiro Sonoshita

Institute for Genetic Medicine, Hokkaido University

Symposium 9
May 23 (Fri) 13:30–16:00 1st Venue: Convention Hall (Convention Center 3F Hall A1-A3)

"Status of Veterinary Care at Each Institution in Animal Studies"

Chairpersons: Mutsumi Suzuki (Non-Clinical Evaluation Expert Committee, Drug Evaluation Committee, Japan Pharmaceutical Manufacturers Association (JPMA)/Kyowa Kirin Co., Ltd.)
Kazuo Watanabe (Non-Clinical Evaluation Expert Committee, Drug Evaluation Committee, Japan Pharmaceutical Manufacturers Association (JPMA))

In order to properly conduct animal studies and achieve the desired results, animals must be tested in physically and psychologically appropriate conditions. Therefore, it is important to consider the 3Rs (Refinement) in order to minimize the pain and suffering caused to the animals as much as possible. As an approach to this, appropriate rearing environment and husbandry, study design and operation, and veterinary care must be provided. Veterinary care to relieve pain and distress is of great importance, and its appropriate implementation is strongly desired.

Veterinary care includes prevention and treatment of injuries and diseases of reared animals, prevention of infectious diseases, and pain/anesthesia management, etc. However, there may be various ways to provide care depending on the content of research, animal species, and other differences.

In this symposium, we hope to provide an opportunity to share and discuss how veterinary care is actually provided at pharmaceutical companies, CROs, and academic institutions, as well as to introduce activities, issues, etc.

S9-1 Requirements for veterinary care in animal testing

◯Hironari Koyama

Technology Solution Department, KAC Co., Ltd.

S9-2 Veterinary care practices in pharmaceutical companies: perspectives from an attending veterinarian

◯Koji Kurogi

Japan Tabacco Inc.

S9-3 Veterinary care in pharmaceutical companies — from the perspective of the study director —

◯Wakasa Shigemi

Research and Development Division, Senju Pharmaceutical Co., Ltd.

S9-4 Veterinary care in CRO

◯Ryosuke Kawashima

Shin Nippon Biomedical Laboratories, Ltd.

S9-5 Practical veterinary care in academia

◯Masami Morimatsu

Laboratory of Laboratory Animal Science and Medicine, Faculty of Veterinary Medicine, Hokkaido University

Symposium 10

May 23 (Fri) 13:30–15:30 2nd Venue: Second Hall (Main Hall 3F Conference Hall)

“New Perspectives to Explore Animal Welfare: Part 2 — Evaluating Laboratory Animal Technology from the Perspective of Animal Behavior —”

Chairpersons: Toshihiko Watanabe (Chugai Pharmaceutical Co., Ltd.)
Sayaka Ooba (CLEA Japan, Inc.)

Well-being of laboratory animals is one of the important factors that has a positive impact on the accuracy of experiments and the reliability of experimental results, but it needs to be scientifically evaluated. Especially in the field of laboratory animal science, further efforts in behavioral evaluation are needed. This symposium will provide an opportunity to learn about animal husbandry and health management based on animal behavior in the field of zoo animals. In addition, specific examples of approaches such as habituation and environmental enrichment in laboratory animal facilities will be introduced. Through these case studies, the speakers and participants will exchange opinions and deepen their understanding for more appropriate evaluations and improvements.

S10-1 Case study from a zoo: creating a system to know the needs of animals and refining care for them

◯ Yudai Arai

Morioka City Zoological Park ZOOMO

S10-2 Animal welfare and ethology

◯ Yoshitaka Deguchi

Department of Animal Science and Fisheries Science, Faculty of Agriculture, Iwate University

S10-3 Behavioral assessment in the evaluation of handling tubes and its challenges

◯ Daisuke Miyagi

KAC Co., Ltd.

S10-4 Efforts for environmental enrichment in the Technical Service Department of CLEA Japan, Inc.

◯ Hiroshi Okumura

CLEA Japan, Inc.

S10-5 Panel Discussion: Appropriate interpretation and evaluation of animal responses in environmental enrichment and animal handling

LAS seminar 1

May 21 (Wed) 9:15–11:15 **3rd Venue (Main Hall 3F Conference Room 3)**

Utilizing the Buzzworthy AI — Digital Transformation in Experimental Animal Science —

Chairpersons: Manabu Ozawa (The Institute of Medical Science, The University of Tokyo)
Terumi Yurimoto (Central Institute for Experimental Medicine and Life Science)
Ayako Isotani (Nara Institute of Science and Technology)

Artificial Intelligence (AI), once a fantastical concept from the realm of science fiction, has become an integral part of daily life following the public release of the conversational AI tool ChatGPT in 2022. Since then, various AI tools have permeated society and been widely utilized. By 2024, AI technology and AI-driven research earned recognition through Nobel Prizes in Physics and Chemistry, solidifying AI's indispensable role in scientific fields.

The field of experimental animal science is no exception. Incorporating AI technology into this domain to efficiently and automatically analyze vast amounts of existing and forthcoming data is expected to become a necessity. In the past, utilizing AI often required programming skills, presenting challenges for wet-lab researchers who focused on animal experimentation and were less familiar with dry analysis techniques. However, the advancement of conversational AI systems, such as ChatGPT, which use natural language, has significantly lowered the barriers for wet-lab researchers to engage in dry analysis.

This seminar will discuss how cutting-edge AI technologies, including ChatGPT, are being integrated into experimental animal science. The talks will highlight applications of AI and machine learning, including examples of automation (digital transformation) in animal experiments and support offered by conversational AI.

This seminar is particularly valuable for AI beginners, encouraging them to incorporate these tools into their own research and in managing animal facilities.

LAS1-1 Exploring the potential of conversational AI in animal experimentation and facility management

◯Naomitsu Ozawa

Kurume University

LAS1-2 Automating plasmid vector design with conversational AI

◯Hideto Mori

Osaka University

LAS1-3 Challenges in automating facial expression analysis of monkeys: obstacles and future prospects

◯Takako Miyabe

Kyoto University

LAS1-4 Four-dimensional label-free live cell image segmentation for predicting live birth potential of mouse embryos

◯Kei Funabashi

Keio University

LAS seminar 2

May 22 (Thu) 9:15–11:15 **3rd Venue (Main Hall 3F Conference Room 3)**

Will Animal Testing Come to an End? Understanding the Possibilities and Limitations of Alternative Methods

Chairpersons: Ryuichi Miura (The University of Tokyo)
Chie Naruse (Kyoto University)
Erika Sasaki (Central Institute for Experimental Medicine and Life Science)

Preparations are underway to revise the Act on Welfare and Management of Animals (Animal Protection Law) in 2025. The revised Animal Protection Law is likely to include the use of alternatives to animal testing. What are alternative methods to animal testing? What guidelines are there? What methods are there? How accurate are they? The lecturers will answer the questions and concerns of the members of the academic society about alternative methods to animal testing.

LAS2-1 Status and prospects of using alternatives to animal testing

◯Yoko Hirabayashi

National Institute of Health Science

LAS2-2 Microphysiological systems opens opportunities for new alternative methods

◯Hitoshi Naraoka

Astellas Pharma Inc.

LAS2-3 Generating embryo models by pluripotent stem cells

◯Yasuhiro Takashima

CiRA, Kyoto University

LAS2-4 Development of experimental and evaluation systems simulating human pathological conditions to transform the assessment of class IV therapeutic devices

◯Kiyotaka Iwasaki

Waseda University

LAS seminar 3

May 23 (Fri) 9:15–11:15 **3rd Venue (Main Hall 3F Conference Room 3)**

I Want to Know! Experimental Animals Part 4

Chairpersons: Hiroshi Kiyonari (RIKEN Center for Biosystems Dynamics Research)
Takashi Inoue (Okayama University of Science)

In animal experimentation, it is crucial to select the appropriate species, maintain them in suitable environments and handle them properly. Therefore, this seminar provides an opportunity to comprehend the characteristics of a new laboratory animal species and acquire essential knowledge regarding its management, including acquisition, care and treatment as described below. We also encourage individuals already using the target animal species to take this seminar as an opportunity to reconfirm their methods of care and handling. This year marks the fourth installment in a series that began three years ago, focusing on “corydoras”, “snake”, “degu” and “rabbit”.

What advantages to use: biological classification, physiology/ecology, characteristics as a laboratory animal, status of research use, etc.

How to obtain: source, precautions for acquisition, relevant laws, etc.

How to care: environmental condition, housing, feeding, environmental enrichment, etc.

How to treat: picking up, holding, administration, etc.

LAS3-1 Corydoras’ unique fertilization: the females drink sperm

◯Natsuko Kawano

Meiji University

LAS3-2 Shimahebi is a promising new model organism in developmental biology

◯Takayuki Suzuki

Osaka Metropolitan University

LAS3-3 A clever rodent that plays songs: degus (Octodon degus)

◯Akio Shinohara, Goro A Nagura-Kato, Chihiro Koshimoto

Miyazaki University

LAS3-4 Not only easy to handle! Indispensable laboratory animal “rabbit”

◯Kazutoshi Nishijima

National Institute for Physiological Sciences

Best Presentation Award

May 21 (Wed) 9:00–11:50 1st Venue: Convention Hall (Convention Center 3F Hall A1-A3)

Poster presentation

May 22 (Thu) 17:00–18:00 Poster & Exhibition Venue (Exhibition Hall 3)

Chairpersons: Eiji Sagara (Hyogo Medical University)
Kimie Niimi (RIKEN CBS)

BP-01 Enriched environment attenuates depression-like behaviors via microglial phenotype switching

◯ Masaya Hasegawa[1)], Akihiro Mouri[1,4)], Kazuo Kunisawa[1)], Takatoshi Sakata[1)], Hitomi Kurahashi[1)], Kuniaki Saito[2,3,4)], Toshitaka Nabeshima[3,4)]

[1)]Dept. Regulatory Sci., Grad. Sch., Health Sci., Fujita Health Univ.,
[2)]Adv. Diagnostic. Syst. Res. Lab., Grad. Sch. Health Sci., Fujita Health Univ.,
[3)]Lab. Health Med. Sci. Inov., Fujita Health Univ., [4)]NPO.J-DO

BP-02 Generation of fully genomically humanized mice by ES cell-based two-step genome editing

◯ Jumpei Taguchi[1)], Masahito Ikawa[1,2)], Manabu Ozawa[1)]

[1)]The Institute of Medical Science, The University of Tokyo, [2)]Research Institute for Microbial Diseases

BP-03 Incomplete activation of *Alyref* and *Gabpb1* leads to preimplantation arrest in cloned mouse embryos

◯ Shunya Ihashi[1,7)], Ryunosuke Mori[1)], Shuntaro Nishizaki[1,8)], Kimiko Inoue[2,3)], Shogo Matoba[2,4)], Narumi Ogonuki[2)], Atsushi Takasu[1)], Kazuya Matsumoto[1)], Masayuki Anzai[5)], Atsuo Ogura[2,3)], Masahito Ikawa[6)], Kei Miyamoto[1,8)]

[1)]Laboratory of Molecular Developmental Biology, Faculty of Biology-Oriented Science and Technology, Kindai University,
[2)]Bioresource Engineering Division, RIKEN Bioresource Research Center,
[3)]Graduate School of Life and Environmental Sciences, University of Tsukuba,
[4)]Cooperative Division of Veterinary Sciences, Tokyo University of Agriculture and Technology,
[5)]Institute of Advanced Technology, Kindai University,
[6)]Research Institute for Microbial Diseases, Osaka University,
[7)]Graduate School of Medicine, Institute of Laboratory Animals, Kyoto University,
[8)]Laboratory of Animal Reproductive Physiology, Department of Animal and Marine Biosciences, Faculty of Agriculture, Kyushu University

BP-04 Development of fully xenogeneic blood in *Runx1* cKO mice without irradiation via intraplacental transplantation

◯ Chingwei Liao[1,2)], Hyojung Jeon[3)], Arata Wakimoto[4)], Zeynab Javanfekr Shahri[1,2)], Natalia Gogoleva[1,2)], Michito Hamada[1)], Satoru Takahashi[1)]

[1)]Department of Anatomy and Embryology, University of Tsukuba,
[2)]Human Biology Program, University of Tsukuba,
[3)]Division of Cell Regulation, The Institute of Medical Science, The University of Tokyo,
[4)]University of Washington

BP-05 Establishment of an artificial insemination method improves the birth rate in the naked mole-rat

◯ Karin Okumura, Yusuke Suzuki, Kaori Oka, Yoshimi Kawamura, Kyoko Miura

Department of Aging and Longevity Research, Kumamoto University

BP-06 Generation of knock-in pigs using adeno-associated virus vector

◯Mitsuhiro Noguchi[1)], Fuminori Tanihara[1)], Nagisa Kohda[2)], Shuichiro Yamanaka[2)], Yuka Inage[2)], Hiromasa Hara[1)], Makoto Inoue[1,3)], Yutaka Hanazono[1)], Takashi Yokoo[2)], Arata Honda[1)]

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BP-07 Identification of essential genes for fetal cardiac function by rapid cKO screening system

◯Natsuki Mikami[1)], Jun Koyama[2)], Kazuya Murata[3)], Fumihiro Sugiyama[4)], Seiya Mizuno[4)]

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BP-08 Genome-wide scan for type 2 diabetes susceptibility genes in the ZFDM rat

◯Misato Takagi[1)], Ryuya Urakawa[1)], Naoki Adachi[1)], Tomoki Hirokoji[1)], Chiaki Nakata[1)], Yoshikazu Hoshino[2)], Norihide Yokoi[1)]

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[2)]Hoshino Laboratory Animals, Inc.

BP-09 5-HT1A receptor-mediated hyper-glutamatergic function-induced autism spectrum disorder-like behaviors

◯Hitomi Kurahashi[1)], Kazuo Kunisawa[1,2)], Kenji F. Tanaka[3)], Hisayoshi Kubota[1,2)], Masaya Hasegawa[1)], Mai Miyachi[4)], Yuka Moriya[4)], Yoichi Hasegawa[4)], Taku Nagai[2)], Kuniaki Saito[5,6,7)], Toshitaka Nabeshima[2,6,7)], Akihiro Mouri[1,2,7)]

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[6)]Laboratory of Health and Medical Science Innovation (HMSI), Fujita Health University Graduate School of Health Science,
[7)]Japanese Drug Organization of Appropriate Use and Research

BP-10 Left-lobe-selective orthotopic lung cancer transplantation model using endoscopic techniques

◯Eiko Nishinaka, Chiyoko Nishime, Masayuki Komatsu, Hitomi Sato, Misa Mochizuki, Kenji Kawai, Taichi Yamamoto, Masami Suzuki

Central Institute for Experimental Medicine and Life Science

BP-11 Testosterone suppresses dermatitis of the KFRS4 rat, a rat model of the atopic dermatitis

◯Kenta Hayashi[1)], Kana Nagasaka[1)], Haruki Kitazume[1)], Ryouta Shimokasa[1)], Hieu Hoang[1)], Shin-ichirou Nakamura[2)], Takashi Kuramoto[1)]

[1)]Laboratory of Animal Nutrition, Department of Animal Science,Tokyo University of Agriculture,
[2)]Laboratory of Laboratory Animal Science, School of Veterinary Medicine, Azabu University

BP-12 The benzylamine analog DDI-4 can enable *C. elegans* to be a model for studying temperature-sensitive male infertility

○ Yoshihiro Shimada[1)], Jun-dal Kim[2)], Yukiko Karuo[3)], Kentaro Kawai[3)], Arata Honda[4)], Akiyoshi Fukamizu[5)], Masaaki Omote[3)], Hitoshi Nishimura[1)]

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[2)]Institute of Natural Medicine, Toyama University,
[3)]Department of Pharmaceutical, Faculty of Pharmaceutical Science, Setsunan University,
[4)]Center for Development of Advanced Medical Technology, Faculty of Medicine, Jichi Medical University,
[5)]Life Science Center for Survival Dynamics, University of Tsukuba

Oral Presentation

Oral Presentation 1 (O1 – O14)
May 21 (Wed) 9:15–11:45 4th Venue (Main Hall 3F Conference Room 4)
Oral Presentation 2 (O15 – O28)
May 22 (Thu) 9:15–11:45 4th Venue (Main Hall 3F Conference Room 4)
Oral Presentation 3 (O29 – O42)
May 23 (Fri) 9:15–11:45 4th Venue (Main Hall 3F Conference Room 4)
Oral Presentation 4 (O43 – O56)
May 23 (Fri) 13:30–16:00 4th Venue (Main Hall 3F Conference Room 4)

Poster Presentation

May 21 (Wed) 9:00 – May 22 (Thu) 18:00 Poster & Exhibition Venue (Exhibition Hall 3)
Core Time: May 21 (Wed) 17:30–18:30 (Odd numbers of P-001 – P118)
May 22 (Thu) 17:00–18:00 (Even numbers of P-001 – P118), Best Presentation Award

Luncheon Seminar LS-01 (Company Name: KAC Co.,Ltd.)

May 21 (Wed) 12:15 – 13:15 1st Venue: Convention Hall (Convention Center 3F Hall A1-A3)
Chairperson: Hironari Koyama (KAC Co., Ltd.)
Yuji Sakamoto (KAC Co., Ltd.)
Theme : Veterinary approach to reared animals in research facilities
Title 1: A day at the Monkey Veterinary Clinic in Inuyama
Speaker 1: Akihisa Kaneko (Center for the Evolutionary Origins of Human Behavior, Kyoto University)
Title 2: Veterinary care for rodents and rabbits in Senju Pharmaceutical Co., Ltd.
Speaker 2: Kotaro Yamada (Central Research Laboratories, Senju Pharmaceutical Co., Ltd.)

Luncheon Seminar LS-02 (Company Name: Natsume Seisakusho Co., Ltd.)

May 21 (Wed) 12:15 – 13:15 2nd Venue: Second Hall (Main Hall 3F Conference Hall)
Chairperson: Teppei Ogawa (Natsume Seisakusho Co., Ltd.)
Title: A New IVC Choise: New proposal from Natsume Seisakusho
Speaker： Shuhei Fujisawa (Natsume Seisakusho Co., Ltd.)

Luncheon Seminar LS-03 (The Jackson Laboratory Japan, Inc.)

May 21 (Wed) 12:15 – 13:15 3rd Venue (Main Hall 3F Conference Room 3)
Chairperson: Aya Uchida (Technical Information Services, The Jackson Laboratory Japan, Inc.)
Title: Revisiting the basics of mice — From nomenclature to colony management —
Speaker: Sawako Tabuchi (Technical Information Services, The Jackson Laboratory Japan, Inc.)

Luncheon Seminar LS-04 (Avidity Science Co., Ltd.)

May 21 (Wed) 12:15 – 13:15 4th Venue (Main Hall 3F Conference Room 4)
Chairperson: Ryoichi Sugimoto (Avidity Science Co., Ltd.)
Title: (Tentative) Next-Generation IVC: AI-Powered Monitoring for Laboratory Animals
Speaker: To be announced

Luncheon Seminar LS-05 (Company Name: In-Vivo Science Inc.)

May 22 (Thu) 12:15 – 13:15 1st Venue: Convention Hall (Convention Center 3F Hall A1-A3)
Chairperson: Takuma Mizusawa (Animal Resource Technical Research Center, CIEM)
Title: Introduction of live imaging technology from CIEM. Proposal for animal experiments using MRI and micro X-ray CT with consideration of the 3Rs
Speaker: Yuji Komaki (Bioimaging Center, CIEM)

Luncheon Seminar LS-06 (Company Name: MIURA Co., Ltd.)

May 22 (Thu) 12:15 – 13:15 2nd Venue: Second Hall (Main Hall 3F Conference Hall)
Chairperson: Kazuto Yoshimi (Institute of Medical Science, The University of Tokyo)
Title: The latest trends in genetically modified marmosets and the methods of efficiently preparing sterilized tools for animal production
Speaker: Kenya Sato (Central Institute for Experimental Medicine and Life Science)

Luncheon Seminar LS-07 (The Jackson Laboratory Japan, Inc.)

May 22 (Thu) 12:15 – 13:15 3rd Venue (Main Hall 3F Conference Room 3)
Chairperson: Tsubasa Nakano (Monitorting Center, The Jackson Laboratory Japan, Inc.)
Title: Benefits and future challenges in changing to Exhaust Air Dust (EAD®) PCR test from tests using sentinel animals
Speaker: Toshihiko Watanabe (Research Division, Chugai Pharmaceutical Co., Ltd.)

Luncheon Seminar LS-08 (Japan SLC, Inc.)

May 22 (Thu) 12:15 – 13:15 4th Venue (Main Hall 3F Conference Room 4)
Chairperson: Eiichi Horigome (PMI Nutrition International)
Title: LabDiet® and TestDiet® introduction, Who, What & Why that makes us the Best!
Speaker: George Nugent (PMI Nutrition International)

Luncheon Seminar LS-09 (CLEA Japan, Inc.)

May 23 (Fri) 12:15 – 13:15 3rd Venue (Main Hall 3F Conference Room 3)
Chairperson: Mamoru Ito (Central Institute for Experimental Medicine and Life Science)
Title: CRISPR-Cas3-based SCID rats for transplantation medicine
Speaker: Tomoji Mashimo (Institute of Medical Science, The University of Tokyo)