



History of the International Congress of Rabbit Biotechnology

The International Congress of Rabbit Biotechnology was first held in University of Tsukuba, Japan in 2005 aiming to enhance the use of transgenic rabbits for medical research. After that, this meeting was organized every two years.

- 1st Tsukuba, Japan (2005)
- 2nd Jouy en Josas, France (2007)
- 3rd Xi'an, China (2009)
- 4th Budapest, Hungary (2011)
- 5th Shanghai, China (2013)
- 6th Lyon, France (2015)
- 7th Yamanashi, Japan (2017)
- 8th Guangzhou, China (2019)

ICRB-2024 marks a significant gathering as it takes place following the COVID-19 pandemic. Together, let us shape the future of rabbit biotechnology in our pursuit of scientific advancement and translational breakthroughs.

- 9th Ann Arbor, USA (2024)



The 9th International Congress of Rabbit Biotechnology and Large Animal Models for Translational Research

August 9 – 12, Ann Arbor, Michigan, USA

WELCOME MESSAGE

Dear ICRB-2024 attendees,

It is my great pleasure to welcome you to the 9th International Congress of Rabbit Biotechnology and Large Animal Models for Translational Research (ICRB-2024) here in Ann Arbor, Michigan!

This meeting marks a significant gathering as it takes place following the COVID-19 pandemic. I am thrilled that experts in the field now reconvene again. Featuring a diverse range of topics, ICRB-2024 will explore cutting-edge research and innovative applications within rabbit biotechnology including genomics, gene editing, stem cells, disease modeling, evolution, and related areas. We are also honored to have experts of other large animal models joining us this year. Esteemed speakers come from the Canada, China, Europe, Japan, United States, and other regions worldwide.

I am sure the meeting will offer a platform to exchange ideas, foster collaborations, and accelerate the translation of findings into practical applications that benefit both human and animal health. The meeting also presents an outstanding opportunity for fellows, students, and junior faculty to gain profound insights into cutting-edge rabbit and larger animal biotechnologies and to engage directly with the global authorities in this domain.

Welcome to Ann Arbor, Michigan, the home of the University of Michigan.
GO BLUE!

Yours sincerely,



Eugene Chen, M.D., Ph.D.

ICRB-2024 Chair

Yuqing Eugene Chen, M.D., Ph.D.



Director, Center for Advanced Models for
Translational Sciences and Therapeutics
Frederick Huetwell Professor of Cardiovascular
Medicine
University of Michigan

Dr. Chen is an endowed Frederick Huetwell Professor of Cardiovascular Medicine, Professor of Cardiac Surgery, Physiology, Pharmacology and Medicinal Chemistry, and Vice-Chair for Basic and Translational Research, Department of Cardiac Surgery at the University of Michigan (UM). The long-term goal of Dr. Chen's laboratory is to stimulate bench-to-bedside research that sheds light on molecular mechanisms underlying the development and progression of metabolic and cardiovascular diseases. Dr. Chen cloned Exendin 4 (BYETTA), facilitating GLP-1 drug development. He discovered the mechanisms of nitro-fatty acids, novel anti-inflammatory signaling molecules, currently in phase 2 clinical trials. Recently he embarked in successful integration of human genetic discoveries with translational research. Dr. Chen is the Founding Director of the Center for Advanced Models for Translational Sciences and Therapeutics at UM since July 2012, which generates gene-targeted (knockout and knockin) and transgenic rabbits for human disease models.

Conference Schedule

August 9, 2024:

- Attendees Arrive and check in. Check in and onsite registration is available at the Hotel (Hilton Garden Inn in Plymouth, MI) on the 9th, and on site of conference on the 10th, and 11th.

August 10, 2024:

- 7:15 am: charter bus leaves Hilton Garden Inn (Plymouth, MI). Arrive at NCRC at ~7:45 am.
- 8:00 am: **Welcome Speech**
 - Steven Kunkel, Executive Vice Dean for Research, U-M Medical School; Chief Scientific Officer, Michigan Medicine
 - Eugene Chen, Chairman of ICRB-2024, University of Michigan Medical School, USA
- 8:30 am – 10:00 am: **Session 1 "Rabbit Genomics"**. Chair: Eugene Chen
 - Speakers
 - Luca Fontanesi, University of Bologna, Italy
 - Title: Rabbit genomics comes of age: exploring and exploiting the diversity of different rabbit genetic resources
 - Katherine Knight, Loyola University Chicago, USA
 - Title: The genetics and genomics of rabbit immunoglobulin
 - Yixue Li, Chinese Academy of Sciences, China
 - Title: The annotation of the rabbit adaptive immune genome
- 10:00 am - 10:30 am: Coffee Break
- 10:30 am - 12:00 am: **Session 2 "Gene Editing and Stem cells"**. Chair: Jifeng Zhang
 - Speakers
 - Qilong Ying, University of Southern California, USA
 - Title: Derivation of embryonic stem cells from rabbit blastocysts
 - Jie Xu, University of Michigan, USA
 - Title: Gene editing in rabbit model development
 - Zhanjun Li, Jilin University, China
 - Title: Efficient and precise gene editing in rabbits
- 12:00 pm - 1:00 pm: Lunch Break (served on site)

Conference Schedule (continued)

August 10, 2024:

- 1:00 pm - 2:30 pm: **Session 3 "Reproduction, Preservation, and Management"**. Chair: Jie Xu
 - Speakers
 - Kazutoshi Nishijima, National Institute of Natural Sciences, Japan
 - Title: Efficient cryopreservation of rabbit sperm
 - Shuji Kitajima, Saga University, Japan
 - Title: Cryopreservation of rabbit embryos: a method for maintaining rabbit models
 - Brooke Pallas, University of Michigan, USA
 - Title: Special care to immunodeficient rabbits
- 2:30 pm - 3:00 pm: Tea Break
- 3:00 pm - 5:00 pm: **Session 4 "Disease Models -1"**. Chair: Dongshan Yang
 - Speakers
 - Laszlo Hiripi, Semmelweis University, Hungary
 - Title: Production of Nox4 KO rabbits and generation of genetically modified rabbits to study the long-term effects of COVID-19
 - Stephen H. Tsang, Columbia University, USA
 - Title: Developing IND enabling rabbit models for CRISPR therapeutics
 - Lori Isom, University of Michigan, USA
 - Title: A rabbit model of the developmental and epileptic encephalopathy, Dravet syndrome
 - Neil Christensen, Pennsylvania State University Medical Center
 - Title: Rabbit models to study oncogenic viruses
- 5:00 pm – 5:30 pm: Poster viewing
- 5:30 pm – 6:30 pm: Selected oral presentations of Abstract. Chair: Jie Xu
- 6:30 pm – 8:00 pm: dinner
- 8:15 pm: charter bus leaves NCRC. Arrives at Hilton Garden Inn (Plymouth, MI) at ~8:45 pm.

Conference Schedule (continued)

August 11, 2024:

- 7:15 am: charter bus leaves Hilton Garden Inn (Plymouth, MI). Arrive at NCRC at ~7:45 am.
- 8:00 am – 8:30 am: **Award Presentation**. Chair: Eugene Chen
 - Lifetime contribution award
 - Young investigator awards
- 8:30 am - 10:00 am: **Session 5** "Disease Models - 2". Chair: Brooke Pallas
 - Speakers
 - Jianglin Fan, Wuyi University, China
 - Title: Rabbit models for the study of atherosclerosis: current status and future perspectives
 - Jifeng Zhang, University of Michigan, USA
 - Title: IDOL rabbits for the study of cardiovascular diseases
 - Dongshan Yang, University of Michigan, USA
 - Title: USH rabbits for the study of eye diseases
- 10:00 am - 10:30 am Coffee Break
- 10:30 am - 12:00 pm **Session 6** "Disease Models - 3". Chair: Jifeng Zhang
 - Speakers
 - Stéphane Bolduc, CHU de Québec-Université Laval, Canada
 - Title: Development of human organ-specific urethra in a rabbit model
 - Krisztina Banfai, BioTalentum Ltd, Hungary
 - Title: Rabbit as a model for in vitro fur production
 - Kezhong Zhang, Wayne State University, USA
 - Title: Cystic fibrosis rabbits for the study of CF liver diseases
- 12:00 pm - 1:00 pm: Lunch Break (served on site)

Conference Schedule (continued)

August 11, 2024:

- 1:00 pm - 2:30 pm: **Session 7** "Other Animal Models". Chair: Jie Xu
 - Speakers
 - Liangxue Lai, Chinese Academy of Sciences, China
 - Title: Hypoimmunons induced from iPSCs in vivo substantially ameliorate ALS disease in genetically modified rabbit and pig models
 - Hongsheng Ouyang, Jilin University, China
 - Pig model for biomedical research
 - Enqi Liu, Xi'an Jiaotong University, China
 - Monkey model of NASH
 - Qiang Sun, Chinese Academy of Sciences
 - Title: Clone Rhesus Monkey by Somatic Cell Nuclear Transfer
- 2:30 pm - 3:00 pm: Tea Break
- 3:00 pm - 4:00 pm: Selected oral presentations of Abstracts. Chair: Jie Xu
- 6:00 pm: dinner
- 8:15 pm: charter bus leaves NCRC. Arrives at Hilton Garden Inn (Plymouth, MI) at ~8:45 pm.

August 12, 2024:

- Tour: the University of Michigan main campus (subjected to change)
- Attendees Depart



Luca Fontanesi

Luca Fontanesi, Ph.D.

DEPARTMENT OF AGRICULTURAL AND FOOD SCIENCES

UNIVERSITY OF BOLOGNA, ITALY

Rabbit genomics comes of age: exploring and exploiting the diversity of domestic rabbit genetic resources

Session 1: 8:30 pm to 10:00 am, August 10, 2024

Dr. Fontanesi's research interests are mainly towards the application of genomics, metagenomics, metabolomics and phenomics in animal breeding and for the sustainability of the livestock production systems. He is a specialist in rabbit genomics for the characterization of rabbit genetic resources. He has been Chair of the European funded COST Action "A Collaborative European Network on Rabbit Genome Biology". He has been involved or he is still involved in several national and international research projects, including Horizon 2020 and Horizon Europe. He has published more than 270 peer reviewed scientific papers (h index = 42), several book chapters and a few patents. He is sector editor of several scientific journals in the animal science sector. He is listed in the World's Top Scientists 2023 (Stanford University).



The New Zealand White rabbit is one of the most common breeds used in laboratory research for its docile nature and ease of handling.

Trivia Facts

Assisted by U-MGPT



Katherine Knight

Katherine Knight, Ph.D.

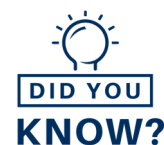
DEPARTMENT OF MICROBIOLOGY & IMMUNOLOGY

LOYOLA UNIVERSITY CHICAGO, USA

The genetics and genomics of rabbit immunoglobulin

Session 1: 8:30 am to 10:00 am, August 10, 2024

Dr. Katherine L. Knight, Professor and Chair of the Department of Microbiology & Immunology at Loyola University Chicago, received her Ph.D. from Indiana University and did post-doctoral work at the University of Illinois at Chicago. For most of her career, her research focused on understanding rabbit B cells and how the antibody repertoire developed in gut-associated lymphoid tissues. She was President of the American Association of Immunologists. She has received several awards, including the Lifetime Achievement Award from the American Association of Immunologists. Although her research interest continues focused on antibodies and B lymphocytes, she also studies the mechanisms by which intestinal microbiota regulate the immune system, especially how exopolysaccharide from the commensal bacterium *Bacillus subtilis* induces an anti-inflammatory environment that protects from numerous diseases.



Rabbits are utilized in antibody production for medical diagnostics and research due to their rapid and robust immune response when compared to other small rodents.

Trivia Facts

Assisted by U-MGPT



Yixue Li

Yixue Li, Ph.D.

SHANGHAI INSTITUTES FOR NUTRITION & HEALTH

CHINESE ACADEMY OF SCIENCES, CHINA

The Annotation of the Rabbit Adaptive Immune Genome

Session 1: 8:30 pm to 10:00 am, August 10, 2024

Dr. Li hails from Xinjiang, China. He earned his Ph.D. in theoretical physics from Heidelberg University, Germany, in 1996. Following his doctoral studies, Dr. Li embarked on a career in bioinformatics research, joining the European Molecular Biology Laboratory as a research staff member from 1997 to 2000. He returned to Shanghai, China, in mid-2000 to continue his academic pursuits. He currently holds the position of Professor at the Guangzhou National Laboratory and serves as the Director of the Biomedical Big Data Center at the Shanghai Institute for Nutrition & Health, Chinese Academy of Sciences. Dr. Li boasts a prolific publication record, with over 300 peer-reviewed journal papers appearing in various international scientific publications. His work has garnered over 25,000 citations, reflecting a significant impact with an H-index of 77.



Trivia Facts
Assisted by U-MGPT

Louis Pasteur developed the earliest effective vaccine against rabies that was first used to treat a human bite victim on July 6, 1885. The method involved inoculation with homogenates of RABV-infected rabbit spinal cord that had been desiccated progressively in sterile air.



Qilong Ying

Qilong Ying, Ph.D.

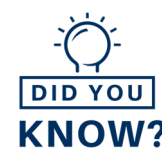
STEM CELL BIOLOGY AND REGENERATIVE MEDICINE

UNIVERSITY OF SOUTHERN CALIFORNIA, USA

Derivation of embryonic stem cells from rabbit blastocysts

Session 2: 10:30 am to 12:00 pm, August 10, 2024

Dr. Qi-Long Ying is Professor in the Department of Stem Cell Biology and Regenerative Medicine at the University of Southern California (USC). He graduated from Southern Medical University, China, in 1987 with a BS degree in medicine. In 1995, he earned a PhD in molecular biology from Shanghai Medical University. From 1999 to 2006, he pursued postdoctoral studies at the University of Edinburgh. Dr. Ying joined USC as a tenure-track assistant professor in 2006 and was promoted to associate professor with tenure in 2012, followed by a promotion to full professor in 2017. Dr. Ying's research primarily focuses on the expansion and therapeutic applications of embryonic and adult stem cells.



Trivia Facts
Assisted by U-MGPT

The first successful in vitro fertilization (IVF) in rabbits was achieved in the early 1950s, paving the way for its application in humans and leading to the first "test-tube" baby in 1978. In 2010, Dr. Robert Edwards is awarded the Nobel Prize for the development of human IVF therapy.



Jie Xu

Jie Xu, Ph.D.

CENTER FOR ADVANCED MODELS AND
TRANSLATIONAL SCIENCES AND
THERAPEUTICS

UNIVERSITY OF MICHIGAN, USA

Gene editing in rabbit model development

Session 2: 10:30 pm to 12:00 pm, August 10, 2024

Dr. Xu obtained his Ph.D. of reproductive physiology from the University of Connecticut in 2002, where he studied animal cloning and telomere biology. As one of the first wave researchers adapting the gene editing tools in biomedical research, Dr. Xu has led multiple projects in generating novel preclinical animal models, including immunodeficient rabbits and cystic fibrosis rabbits at the University of Michigan. He has also made contributions to improve the gene editing tool. In one project, Dr. Xu and colleagues developed a novel Cas9 variant miCas9 that brings improved efficacy and safety to gene editing.



The only animals susceptible to experimental HIV-1 infection are the chimpanzee, gibbon ape, and rabbits.

Trivia Facts

Assisted by U-MGPT



Zhanjun Li

Zhanjun Li, Ph.D.

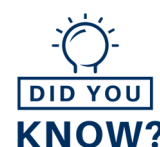
COLLEGE OF ANIMAL SCIENCE

JILIN UNIVERSITY, CHINA

Efficient and precise gene editing in rabbits

Session 2: 10:30 am to 12:00 pm, August 10, 2024

Dr. Li is Professor of Jilin University, Young Yangtze River Scholar of Ministry of Education, Outstanding Contribution Award of Jilin Province, Youth Science and Technology Award of Jilin Province. His research focuses on the optimization of gene editing system and construction of gene editing rabbit models. More than 30 gene editing rabbit models have been generated in his groups. As a correspondence author, published in Nature Communications, Science Advances, Genome Biology, Nature Aging, Molecular Therapy, EMBO J, Biosensors and Bioelectronics, and Cell Discovery, Nucleic Acids Res and E-life.



WHHL (Watanabe heritable hyperlipidemic) rabbits played a crucial role in the discovery of the LDLR pathway, leading to the Nobel Prize study by Brown & Goldstein in 1985.

Trivia Facts

Assisted by U-MGPT



Kazutoshi Nishijima, D.V.M.

NATIONAL INSTITUTE OF NATUREAL SCIENCES

JAPAN

Kazutoshi Nishijima

Efficient Cryopreservation of Rabbit Sperm

Session 3: 1:00 pm to 2:30 pm, August 10, 2024

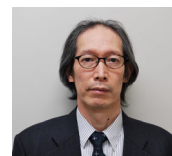
Dr. Nishijima is Professor in the National Institutes for Natural Sciences, in Okazaki, Aichi pref., Japan. He graduated from the United Graduate School of Veterinary Sciences, Gifu University in 2004. Since then, he has worked at the Osaka University, Saga University, and Akita University before he joined the National Institutes for Natural Sciences in 2020. His research interest are Laboratory Animal Science, Reproductive Technology, and Metabolism.



Rabbits have a unique digestive system with a large cecum, making them valuable for gastrointestinal studies.

Trivia Facts

Assisted by U-MGPT



Shuji Kitajima, D.V.M., Ph.D.

ANALYTICAL RESEARCH CENTER FOR
EXPERIMENTAL SCIENCES

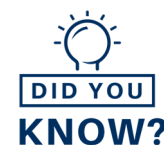
SAGA UNIVERSITY, JAPAN

Shuji Kitajima

Cryopreservation of rabbit embryos: a method for maintaining rabbit models

Session 3: 1:00 am to 2:30 pm, August 10, 2024

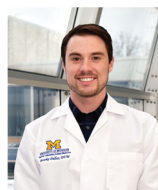
Shuji Kitajima is Associate Professor at the Analytical Research Center for Experimental Sciences, Saga University, Japan. His current research projects include the development of genetically modified rabbits for human disease models and the cryopreservation of rabbit sperm and embryos. After receiving his Ph.D. (Veterinary Medical Science) from the United Graduate School of Yamaguchi University in 1999, he had the opportunity to join the research group of Dr. Jianglin Fan (former professor at Yamanashi University, Japan) as a collaborator in the development of transgenic rabbits, which is his current research project. To date, Dr. Kitajima and Dr. Fan have co-developed several transgenic rabbits that have contributed to the study of atherosclerosis and lipid metabolism. Dr. Kitajima has been in his current position since 2007.



Rabbits were among the first animals to have their embryo cryopreserved and later successfully thawed and developed to term, which was a significant advancement in reproductive biology.

Trivia Facts

Assisted by U-MGPT



Brooke Pallas

Brooke Pallas, DVM, DACLAM

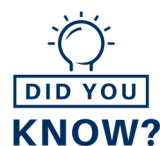
UNIT FOR LABORATORY ANIMAL MEDICINE

UNIVERSITY OF MICHIGAN, USA

Special care to immunodeficient rabbits

Session 3: 1:00 pm to 2:30 pm, August 10, 2024

Dr. Pallas joined the Unit for Laboratory Animal Medicine as a Faculty Veterinarian in July 2020 after completing his postdoctoral fellowship in laboratory animal medicine with ULAM and the University of Michigan (U-M). Prior to his time at U-M, Pallas completed his undergraduate training (genomics and molecular genetics) and veterinary degree at Michigan State University. Dr. Pallas' research interests are directed toward the design, production, clinical management, and phenotypic analysis of genetically-modified large animal models. In collaboration with U-M's CAMTraST Lab, his research specifically focuses on the development of an immunodeficient rabbit model for therapeutic CRISPR-based gene editing.



Rabbit models have been used to study human reproductive health issues, including the development of contraceptive methods and in vitro fertilization technologies.

Trivia Facts

Assisted by U-MGPT



Laszlo Hiripi

Laszlo Hiripi, Ph.D.

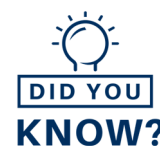
LABORATORY ANIMAL SCIENCE COORDINATION
CENTER

SEMMELWEIS UNIVERSITY, HUNGARY

Production of NOX4 KO rabbits and generation of genetically modified rabbits to study the long-term effects of COVID-19

Session 4: 3:00 pm to 5:00 pm. August 10, 2024

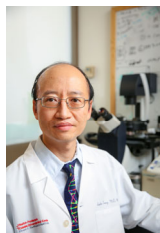
László Hiripi graduated from the Faculty of Ecology at the József Attila University of Szeged, and then received his PhD in Animal Husbandry Sciences from the Szent István University in Godollo (Hungary). He was a postdoctoral fellow at the School of Biomedical Sciences-University Ulster (UK). In 2005 László returned to Hungary and was a PI at the Department of Animal Biotechnology, NAIK-ABI. In 2014 he became the head of the department. Since 2020 he has been involved as a scientific consultant in Immunogenes Ltd. Since 2021, he has been the director of the Laboratory Animal Science Coordination Centre at Semmelweis University, the largest medical university in Hungary. His research focuses on the development and application of modern animal biotechnology using transgenic and genome editing methods.



Rabbits have a gestation period of about 31 days, allowing for rapid generation turnover which is advantageous in developmental studies.

Trivia Facts

Assisted by U-MGPT



Stephen Tsang

Stephen Tsang, M.D., Ph.D.

OPHTHALMOLOGY, PATHOLOGY AND CELL BIOLOGY, INSTITUTE OF HUMAN NUTRITION, AND STEM CELL INITIATIVE

COLUMBIA UNIVERSITY, USA

Developing IND enabling rabbit models for CRISPR therapeutics

Session 4: 3:00 pm to 5:00 pm, August 10, 2024

Dr. Tsang, M.D., Ph.D. has been culturing stem cells since 1992 and created the first mouse model for a recessive form of retinitis pigmentosa (RP) by applying genome engineering to ES cell technology in 1995. He has expertise in designing and testing genome engineering strategies in pre-clinical models, developing patient-specific knock-in models, generating of patient cell lines and providing care to patients with a precision medicine approach. He is also leading efforts in FDA trials for gene therapies, including PDE6A, RAB geranylgeranyl transferase, RPGR, CNGB3, CNGA3 and ABCA4 retinopathies. He is an elected member of several honorary societies including the American Society for Clinical Investigation, and American Ophthalmological Society.



**DID YOU
KNOW?**

In ophthalmologic research, the rabbit's eye shares several structural and physiological characteristics with the human eye.

Trivia Facts

Assisted by U-MGPT



Lori Isom

Lori Isom, Ph.D.

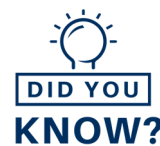
DEPARTMENT OF PHARMACOLOGY

UNIVERSITY OF MICHIGAN, USA

A rabbit model of the developmental and epileptic encephalopathy, Dravet syndrome

Session 4: 3:00 pm to 5:00 pm. August 10, 2024

Dr. Isom received her PhD in Pharmacology at Vanderbilt University School of Medicine and then trained as a postdoctoral fellow in the laboratory of Dr. William A. Catterall at the University of Washington. Dr. Isom's research program focuses on voltage-gated sodium channel function and the roles of sodium channel gene variants in developmental and epileptic encephalopathy (DEE), including Dravet syndrome. She is a Fellow of the American Association for the Advancement of Science, a Fellow of the American Society for Pharmacology and Experimental Therapeutics, and a Fellow of the American Epilepsy Society. Dr. Isom was elected to the National Academy of Medicine in 2021 and received the American Epilepsy Society Basic Science Research Award in 2022.



**DID YOU
KNOW?**

Rabbits are often used as a model organism in toxicity and safety testing due to their sensitivity to various compounds.

Trivia Facts

Assisted by U-MGPT



Neil Christensen

Neil Christensen, Ph.D.

DEPARTMENT OF PATHOLOGY AND
MICROBIOLOGY AND IMMUNOLOGY

PENN STATE UNIVERSITY, USA

Rabbit models to study oncogenic viruses

Session 4: 3:00 pm to 5:00 pm, August 10, 2024

Dr. Christensen's research focuses on preclinical models to study oncogenic viruses with emphasis on animal models of papillomavirus and Epstein Barr Virus infections. A second major component of his research involves the construction of a large and diverse set of monoclonal antibodies to various viral and host proteins with particular strength in probes that recognize Human Papillomaviruses and other viral capsids that have virus neutralizing activities. At PSU he is currently Director of the Gittlen Laboratories for Cancer Research, and the PSU Antibody Core. He has published over 200 peer-reviewed publications in scientific journals and received an American Social Health Association Fellowship in 1988. In 2018 he received a Faculty Scholar Award, Entrepreneurial activities, from Penn State University.



**DID YOU
KNOW?**

Trivia Facts

Assisted by U-MGPT

Rabbit skin papillomas and derived carcinomas induced by the cottontail rabbit papillomavirus provided the first model of viral carcinogenesis in mammals.



Jianglin Fan

Jianglin Fan, M.D., Ph.D.

PHARMACY AND FOOD ENGINEERING

WUYI UNIVERSITY, CHINA

Rabbit models for the study of atherosclerosis: current status and future perspectives

Session 5: 8:30 am to 10:00 am. August 11, 2024

Dr. Jianglin Fan is Distinguished Professor of Pharmacy and Food Engineering at Wuyi University in Jiangmen, China. Additionally, he holds the position of Professor Emeritus at the University of Yamanashi in Japan. Dr. Fan obtained his MD from Yanbian University, School of Medicine, and his PhD from Saga Medical School. He completed a postdoctoral fellowship at the Gladstone Institute at the University of California, San Francisco. Dr. Fan's research primarily focuses on atherosclerosis. He has made significant contributions to the field by developing innovative transgenic and knockout rabbit models. His work has resulted in over 250 publications in esteemed peer-reviewed journals. In recognition of his outstanding contributions, Dr. Fan has been honored with several awards, including the Japan Pathology Award 2021 and the Japan Atherosclerosis Society Award 2023.



**DID YOU
KNOW?**

Trivia Facts

Assisted by U-MGPT

The rabbit's cardiovascular system closely mimics that of humans in some aspects, making them good models for studying atherosclerosis and other cardiovascular diseases.



Jifeng Zhang

Jifeng Zhang, Ph.D.

CENTER FOR ADVANCED MODELS AND
TRANSLATIONAL SCIENCES AND
THERAPEUTICS

UNIVERSITY OF MICHIGAN, USA

IDOL rabbits for the study of cardiovascular diseases

Session 5: 8:30 am to 10:00 am, August 11, 2024

Dr. Jifeng Zhang is Professor of cardiovascular medicine at the University of Michigan. He is among the first group of researchers to develop and use the ZFN, TALEN, and CRISPR/Cas9 technologies to generate gene knock-out and knock-in animal models, including mice, rabbits, and pigs. His team has contributed over 30 rabbit models to date, including MPO, TRIM5, ADCY9, CETP, ApoBEC1, IDOL, apoAII, apoE, and ApoCIII KO. At the same time, his team are the first to report that enhancing the homologous recombination (HR) pathway by small-molecule RS-1 can significantly increase the Cas9 and TALEN mediated gene knock-in efficiency in rabbit embryos. His work also contributed to the rabbit genome assembly that is adapted by NCBI.



**DID YOU
KNOW?**

*Trivia Facts
Assisted by U-MGPT*

Rabbit is the most widely used animal in atherosclerosis research: in 1908, Anichkov first discovered that feeding cholesterol to rabbits promptly led to atherosclerosis.



Dongshan Yang

Dongshan Yang, Ph.D.

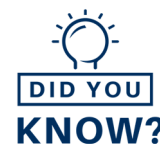
CENTER FOR ADVANCED MODELS AND
TRANSLATIONAL SCIENCES AND THERAPEUTICS

UNIVERSITY OF MICHIGAN, USA

USH rabbits for the study of eye diseases

Session 5: 8:30 am to 10:00 am. August 11, 2024

Dr. Dongshan Yang has over 20 years of experience working in the genetic engineering of large animals as human disease models. He has specific training and expertise in embryo manipulation, genome editing, and cell and molecular biology techniques, and developed novel methods to improve efficiency of transgenic, multiple gene transgenic, gene knock-out (KO), and knock-in (KI) technologies in cattle, pigs and rabbits. Dr. Yang was the first to apply the novel Zinc Finger Nuclease (ZFN) technology in pig genome editing and the first to use CRISPR/Cas9 technology in rabbit genome editing. He has published over 50 scientific papers and inventions. His research currently focused on the development of novel gene-editing therapy using the genetic modified large animal models he has established.



**DID YOU
KNOW?**

*Trivia Facts
Assisted by U-MGPT*

The Draize eye irritancy test, which involved the application of substances to the eyes of live rabbits, originated in the 1940s but has since faced ethical scrutiny and reduction in use.



Stéphane Bolduc

Stephane Bolduc, M.D.

PEDIATRIC UROLOGY

CHU DE QUÉBEC-UNIVERSITÉ LAVAL, CANADA

Development of human organ-specific urethra in a rabbit model

Session 6: 10:30 am to 12:00 pm, August 11, 2024

Dr. Stéphane Bolduc is a Clinician-Scientist and Professor at the Department of Surgery, Faculty of Medicine, Laval University. He completed his residency in urology at Laval University in 2000, followed by a fellowship in pediatric urology at The Hospital for Sick Children in Toronto (2002). He has since been the head of pediatric urology at the CHU de Québec-Université Laval. He is a member of the Regenerative Medicine Division of CHU de Québec Research Center and was the Division Director (2014-2017). He is now Deputy Director of Clinical Research at the CHU de Quebec. His fundamental research is in the field of Genitourinary Tissue Engineering at LOEX.



The rabbit ear model is widely used for studying wound healing and tissue regeneration because the tissue architecture and wound healing process in the rabbit ear are similar to those in human skin.

Trivia Facts

Assisted by U-MGPT



Krisztina Bánfai

Krisztina Bánfai, Ph.D.

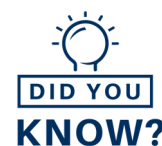
LEAD RESEARCH SCIENTIST

BIOTALENTUM LTD

Rabbit as a model for in vitro fur production

Session 5: 8:30 am to 10:00 am. August 11, 2024

Dr. Bánfai earned her bachelor's degree at the University of Pecs, Faculty of Natural Sciences. She finished her master's degree as a medical biotechnologist in cell and tissue engineering specialization at the University of Pecs Medical School. In 2020, she defended her PhD in basic medicine at the Theoretical Sciences Doctoral School, University of Pecs Medical School. Her PhD research was focused on regenerative medicine, with an emphasis on investigating thymic aging and extracellular vesicles for regenerative purposes. Currently, she is a lead research scientist coordinating several EU projects in the field of stem cell biology and neurology at BioTalentum Ltd, Godollo in Hungary. She is involved in EL-PELAGE EU project as well, which aims to create animal-free production of human hair and rabbit fur organoids in vitro differentiated from iPS cells.



The long-eared cottontail species has been used to better understand seasonal affective disorders, as their behavior changes with the length of the day similarly to humans.

Trivia Facts

Assisted by U-MGPT



Kezhong Zhang

Kezhong Zhang, Ph.D.

MOLECULAR MEDICINE AND GENETICS

WAYNE STATE UNIVERSITY, USA

Cystic fibrosis rabbits for the study of CF liver diseases

Session 6: 10:30 am to 12:00 pm, August 11, 2024

Dr. Zhang's research is focused on cellular stress responses originated from the endoplasmic reticulum (ER) and/or mitochondria that modulate inflammation and metabolism that are associated with metabolic disease, autoimmune disease, and cancer. Research projects in the laboratory include: 1) regulation of hepatic energy metabolism by ER stress-inducible transcriptional activators; 2) roles and mechanisms for the UPR transducer IRE1a in rheumatoid arthritis and lupus; 3) airborne particulate matter (PM2.5)-induced cellular stress responses and their effects on non-alcoholic steatohepatitis (NASH) and type-2 diabetes; and 4) roles of ER lipid-raft proteins and UPR transducers in breast cancer malignancy maintenance and therapy resistance.



There are six mammalian models that have been developed for the study of cystic fibrosis: mice, pigs, ferrets, rats, rabbits, and sheep.

Trivia Facts
Assisted by U-MGPT



Liangxue Lai

Liangxue Lai, Ph.D.

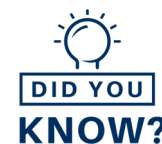
GUANGZHOU INSTITUTES OF BIOMEDICINE AND HEALTH

CHINESE ACADEMY OF SCIENCES, CHINA

Hypoimmunogenic human motor neurons induced from iPSCs in vivo substantially ameliorate ALS disease in genetically modified rabbit and pig models

Session 7: 1:00 pm to 2:30 pm. August 11, 2024

Dr. Lai earned Ph.D. at Northeast Agricultural University in 1995. In 1998, he went to the University of Missouri in the United States for postdoctoral research and became a research assistant professor in 2002. In July 2007, he was appointed as a principal researcher at the Guangzhou Institutes of Biomedicine and Health, Chinese Academy of Sciences, and was selected for the "Hundred Talents Program" of the Chinese Academy of Sciences. He has been conducting research in stem cells, transgenic large animals, and animal cloning. He has published over 200 papers in SCI journals including high profile ones such as Science, Nature Biotechnology, Cell, and Cell Stem Cell, with over 16,000 citations in total. As of now, his team has produced more than 100 kinds of genetically modified large animals including pigs, dogs and rabbits with important applications in biomedicine and agriculture.



Rabbits have a similar bone density to humans, making them particularly useful for studies of osteoporosis and bone healing.

Trivia Facts
Assisted by U-MGPT



Hongsheng Ouyang

Hongsheng Ouyang, Ph.D.

COLLEGE OF ANIMAL SCIENCE

JILIN UNIVERSITY, CHINA

Pig models for biomedical research

Session 7: 1:00 pm to 2:30 pm, August 11, 2024

Dr. Ouyang is Professor at Jilin University. He is the director of the Animal Genome Editing Technology Innovation Center in Jilin Province, China. Dr Ouyang has been conducting research on pig disease resistance, gene edited pigs, and miniature pig models. He also serves as the Vice Chairman of the Animal Physiology and Biochemistry Branch of the Chinese Society of Animal Husbandry and Veterinary Medicine, Vice Chairman of the Biochemistry and Molecular Biology Society of Jilin Province, and Vice Chairman of the miniature Pig Professional Committee of the Chinese Society of Experimental Animals. Dr Ouyang has led projects such as the Major National Science and Technology Projects in China and the National Natural Science Foundation of China. He has published over 160 papers in SCI journals.



Trivia Facts

Assisted by U-MGPT

In 2022, the world's first porcine-to-human heart transplantation was performed at the University of Maryland School of Medicine, where a genetically modified pig heart was successfully transplanted into a 57-year-old man in the end stage of heart disease.



Enqi Liu

Enqi Liu, Ph.D.

SCHOOL OF BASIC MEDICAL SCIENCES

XI'AN JIAOTONG UNIVERSITY, CHINA

Monkey model of NASH

Session 7: 1:00 pm to 2:30 pm. August 11, 2024

Dr. Liu Enqi is Professor of Pathology and Pathophysiology in the School of Basic Medical Sciences, Xi'an Jiaotong University Health Science Center. He also serves as the Director of Laboratory Animal Center and PI of Cardiovascular Research Institute of Xi'an Jiaotong University. Dr. Liu received the BS and MS degrees in Animal Genetics & Veterinary from the China Agriculture University, the PhD in Pathophysiology from the Saga University, Japan. His research focuses on cardiovascular and metabolic diseases, animal models of human diseases. He has published more than 100 papers on peer reviewed journals, such as Cell Metab, Circulation, J Am Soc Nephrol, J Pineal Res, Arterioscler Thromb Vasc Biol, iScience. He also edited and published 7 books, including Medical Laboratory Animal Science, Animal Models of Human Diseases and Fundamentals of Laboratory Animal Science.



Trivia Facts

Assisted by U-MGPT

The Rh factor, a fundamental concept in blood transfusion medicine, was discovered through research with rhesus monkeys. This is why it's named the "Rhesus (Rh) factor."



Qiang Sun

Qiang Sun, Ph.D.

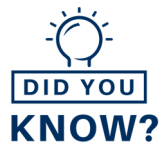
CENTER FOR EXCELLENCE IN BRAIN SCIENCE
AND INTELLIGENCE TECHNOLOGY

CHINESE ACADEMY OF SCIENCE, CHINA

Clone Rhesus Monkey by Somatic Cell Nuclear Transfer

Session 7: 1:00 pm to 2:30 pm, August 11, 2024

Dr. Sun completed his Ph.D. in 2005 from the Chinese Academy of Sciences. In 2007, he obtained China's first batch of "test tube crab-eating macaques" (PNAS 2008). Joining the Institute of Neuroscience in 2009, he spearheaded the establishment of the Nonhuman Primate Research Facility. Over the years, he has achieved groundbreaking advancements. His group developed transgenic monkey construction technology via lentiviral transduction, resulting in transgenic monkeys exhibiting autistic phenotypes (Nature 2016). Most notably, he pioneered non-human primate somatic cell cloning technology internationally, addressing challenges such as chimera formation, off-target effects, and complexities in non-human primate genetic manipulation (Cell 2018).



Zhong Zhong and Hua Hua are the names of the first cloned monkeys through somatic cell nuclear transfer.

Trivia Facts
Assisted by U-MGPT

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Frederick Huetwell Professor of
Cardiovascular Medicine
Director, Center for Advanced Models for
Translational Sciences and Therapeutics
University of Michigan



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Jie Xu

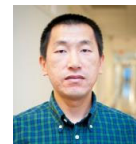
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University of Michigan



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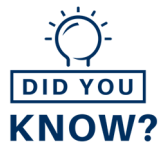
Center for Advanced Models for
Translational Sciences and Therapeutics
University of Michigan



Executive Co-Chair

Mccotter, Melissa

Center for Advanced Models for
Translational Sciences and Therapeutics
University of Michigan



Trivia Facts
Assisted by U-MGPT

On January 8, 2024, the University of Michigan Football team won the national championship in the College Football Playoff, first overall national title since 1997 and 12th in program history.



History of the International Congress of Rabbit Biotechnology

The International Congress of Rabbit Biotechnology was first held in University of Tsukuba, Japan in 2005 aiming to enhance the use of transgenic rabbits for medical research. After that, this meeting was organized every two years.

- 1st Tsukuba, Japan (2005)
- 2nd Jouy en Josas, France (2007)
- 3rd Xi'an, China (2009)
- 4th Budapest, Hungary (2011)
- 5th Shanghai, China (2013)
- 6th Lyon, France (2015)
- 7th Yamanashi, Japan (2017)
- 8th Guangzhou, China (2019)

ICRB-2024 marks a significant gathering as it takes place following the COVID-19 pandemic. Together, let us shape the future of rabbit biotechnology in our pursuit of scientific advancement and translational breakthroughs.

- 9th Ann Arbor, USA (2024)

The 9th International Congress of Rabbit Biotechnology and Large Animal Models for Translational Research

August 9 – 12, Ann Arbor, Michigan, USA