



**HOKKAIDO**  
UNIVERSITY

# The 10th Meeting of Asian Association of Veterinary Schools

**Duration:** September 21 (Tue) - September 22 (Wed), 2010  
**Venue:** Conference Hall  
Graduate School of Veterinary Medicine  
Hokkaido University  
**Address/**  
Kita 18-jyo Nishi 9-chome, Kita-ku, Sapporo



# Contents:

<b>Welcoming address</b>	<b>4</b>
<b>History, 10th Meeting and future of AAVS</b>	<b>5</b>
<b>Program (Day 1– 2)</b>	<b>6-7</b>
<b>Venue</b>	<b>8-9</b>
<b>General Information &amp; Guideline</b>	<b>10</b>
<b>List of AAVS participants</b>	<b>11-14</b>
<b>Session 1 Animal welfare</b>	<b>15-23</b>
<b>Session 2 Environmental toxicology &amp; others</b>	<b>25-31</b>
<b>Session 3 Food safety</b>	<b>33-43</b>
<b>Session 4 Zoonoses</b>	<b>45-57</b>
<b>CV of other participants</b>	<b>59-69</b>

## Welcoming Address

**Shigeo Ito, DVM, PhD**

Dean

Graduate School of Veterinary Medicine,  
Hokkaido University



I would like to welcome you to the 10th meeting Asian Association of Veterinary Schools (AAVS) at the Graduate School of Veterinary Medicine, Hokkaido University.

Hokkaido University was founded in 1876 as Sapporo Agricultural College, the first college in Japan to award bachelor degrees, and has worked throughout 20 century to promote the modernization of Japan. Veterinary education began at 1880, by Dr. J.C. Cutter from Harvard Medical School. The phrase “Boys, be ambitious!” the parting words of Dr. Clark, the first Vice-Principal, to his students, is recognized as one of the most popular catchphrases for Japanese. The university is a research- intensive with 12 undergraduate schools, 18 graduate schools and numerous research facilities and currently has about 18,000 students and 4,000 staff member.

At present, the Graduate School of Veterinary Medicine consists of 1 division, Veterinary Science, which contains 5 Departments (Biomedical Sciences, Disease Control, Veterinary Clinical Sciences and Environmental Veterinary Sciences and Applied Veterinary Sciences) divided into 18 laboratories with 49 academic staff members including 20 professors.

The veterinary education has been faced with many problems such as food safety, public health, zoonotic disease, animal welfare and so on. In Hokkaido University, the Center for Zoonosis Control was established in 2005. The aim of this institute engages in research and education on zoonoses and develops leaders with high levels of knowledge and skill through the training of students not only in Japan but also Asian and African countries. The Global COE (Center of Excellence) Program entitled “Establishment of International Collaboration Centers for Zoonosis Control”, supported by a grant from Ministry of Education, Culture, Sports, Science and Technology of Japan, was launched in 2008 at Hokkaido University. Recently, the School of Veterinary Medicine has got accreditation from the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) that is a NPO promoting the humane treatment of animals in science through voluntary accreditation and assessment programs.

In the AAVS meeting, we will have four symposiums based on recent social demands, food safety, zoonoses, animal welfare and field toxicology. I look forward to seeing you here at the Graduate School of Veterinary Medicine, Hokkaido University.

# History, 10<sup>th</sup> Meeting and future of AAVS



**Takashi Umemura, DVM, PhD**  
President of AAVS  
Graduate School of Veterinary Medicine  
Hokkaido University

First of all, I would like ardently welcome all the delegates from prominent Asian veterinary schools to Sapporo. Sapporo is young city and populated 1.9 millions, the largest city in northern part of Japan. September is very comfortable season, and I hope all of you enjoy your short stay in Sapporo.

## History of AAVS

AAVS was set up in 2001 and AAVS meetings have been convened annually since then: first in Seoul, 2001, 2<sup>nd</sup> in Tokyo, 2002, 3<sup>rd</sup> in Kuala Lumpur, 2003, 4<sup>th</sup> in Kuala Lumpur, 2004, 5<sup>th</sup> in Bangkok, 2005, 6<sup>th</sup> in Jakarta, 2006, 7<sup>th</sup> in Taipei, 2007, 8<sup>th</sup> in Seoul, 2008 and 9<sup>th</sup> in Seoul, 2009. The purpose of the Association is the advancement of education, research and public services in veterinary sciences. The regular member of the Association is the head of educational institutions of veterinary medicine in South-East and Far-East Asian countries. Symposiums at AAVS have been focused on Education in Asian Veterinary Schools (3<sup>rd</sup>), Avian Influenza (6<sup>th</sup>), Veterinary Teaching Hospitals (7<sup>th</sup>), Zoonotic Disease (8<sup>th</sup>), Accreditation and Standardization of Veterinary Education System (9<sup>th</sup>). Membership has been given 4 Universities in Indonesia, 2 in Japan, 9 in Korea, 2 in Philippines, 2 in Taiwan, 5 in Thailand, and one in Vietnam, Malaysia, Myanmar and USA, respectively.

## 10<sup>th</sup> Meeting of AAVS

Twenty-four delegates and invited speakers from oversea countries and 14 delegates from Japanese veterinary schools are attending the 10<sup>th</sup> Meeting. New members for AAVS are National Pingtung University and National Chiayi University (Taiwan), Mahidol University (Thailand), Mongolian State University of Agriculture (Mongol), and Osaka Prefecture University, Obihiro University of Agriculture and Veterinary Medicine and Kitasato University (Japan). Their membership will be approved by the Executive Committee on September 22.

In this meeting, 4 symposiums will be provided by delegates and invited speakers. The subjects are Animal Welfare (9/21), Environmental Toxicology and Others (9/21), Food Safety (9/22) and Zoonoses (9/22). Research and education on these subjects are becoming increasingly important in Asian veterinary schools. We will exchange the information regarding current status and future view of the subjects in each country, and research and educational approaches to them in each veterinary school.

## Future of AAVS

Veterinarians and veterinary science in Asian countries bear grave responsibilities for eradication of zoonoses, assurance of food safety, environmental conservation, collaboration with international standard on animal welfare, provision of good-quality medical care to all kinds of animals, and so on. AAVS is the only one international association of Asian veterinary schools to discuss and exchange up-to-date information on these subjects. Member schools support each other to respond these demands from our societies. As a current president of AAVS, I would like to propose the followings to members for future development of AAVS.

1. AAVS may accept all the application to the member and the delegates from veterinary schools of Asian countries.
2. The delegates to AAVS may be a dean, vice-dean or individuals appointed by the representative of each veterinary school.
3. AAVS meetings will discuss the problems, concerns and requests reported from member schools and address those important issues cooperatively.

# Program Day 1 (September 21, tue)

10:00	<b>Campus tour (only for foreign participants)</b>
12:00 ~ 13:00	Lunch at Faculty house “Enreisou” (only for foreign participants)
13:30 ~	<b>Opening speech</b> <b>Vice President of Hokkaido University</b> <b>Shigeo Ito</b> (Dean of Graduate School of Veterinary Medicine, Hokkaido University, Japan)
13:40 ~ 15:50	<b>1. Animal Welfare</b> (Chair person: Naoko Kagiya) <b>O-1 Some Animal Welfare Issues in Taiwan</b> <b>Frank Chiahung Mao</b> (National Chung Hsing University, Taiwan) <b>O-2 Proper conduct of animal experimentation</b> <b>– Education for veterinary students -</b> <b>Naoko Kagiya</b> (Hokkaido University, Japan) <b>O-3 Animal Welfare of Experimental and Domestic animals Initiative</b> <b>in Mahidol Veterinary School</b> <b>Parntep Ratanakorn</b> (Mahidol University, Thailand) <b>O-4 Animal Welfare Education in US Veterinary Schools</b> <b>Harry Rozmiarek</b> (University of Pennsylvania, USA)
15:50 ~ 16:00	Coffee break
16:00 ~ 17:00	<b>2. Environmental Toxicology &amp; Others</b> (Chair person: Mayumi Ishizuka) <b>O-5 The Researches in Appropriate Reproductive Technology</b> <b>for Animal Production Improvement, Wildlife Conservation</b> <b>and Biomedical Application</b> <b>Mongkol Techakumphu</b> (Chulalongkorn University, Thailand) <b>O-6 Veterinary public health in Mongolia</b> <b>Bolormaa Pelden</b> (Mongolian State University of Agriculture, Mongol) <b>O-7 The Environmental Pollution in African countries: Effects of</b> <b>heavy metals observed in wild / domestic animals inhabit in mining</b> <b>areas in Zambia</b> <b>Mayumi Ishizuka</b> (Hokkaido University, Japan)
17:10 ~ 19:00	Welcome reception at Conference room

## Program Day 2 (September 22, wed)

10:30 ~ 12:10 **3. Food Safety** (Chair person: Tsutomu Sekizaki)

- O-8 Effects of goat milk peptide on profile of malondialdehyde (mda) and superoxide dismutase (sod) activities of lung cancer rat**  
**Romziah Sidik** (Airlangga University, Indonesia)
- O-9 Food Safety Issues in the Philippines**  
**Conrado A. Valdez** (University of the Philippines Los Baños, Philippines)
- O-10 Milk Quality in Thailand**  
**Suneerat Aiumlamai** (Khon Kaen University, Thailand)
- O-11 Zoonosis and Food Safety in Korea**  
**Yong Ho Park** (Seoul National University, Korea)
- O-12 Launch, Organization and Activities of Research Center for Food Safety in University of Tokyo**  
**Tsutomu Sekizaki** (University of Tokyo, Japan)

12:10 ~ 13:10 Lunch at Conference room

13:10 ~ 15:30 **4. Zoonoses** (Chair person: Hiroshi Kida)

- O-13 Efforts Towards Free of Bovine Tuberculosis in Taiwan**  
**Vincent Hsiao** (National Taiwan University, Taiwan)
- O-14 Serological Profile of Leptospirosis of Animals in Thailand**  
**Thavajchai Sakpuaram** (Kasetsart University, Thailand)
- O-15 Emerging and Reemerging of Important Zoonotic Diseases In Malaysia**  
**Mohd Hair-Bejo** (Universiti Putra Malaysia, Malaysia)
- O-16 Update: H5N1 Avian Influenza Viruses in Indonesia**  
**Chairul A. Nidom** (Airlangga University, Surabaya, Indonesia)
- O-17 Prevalence and Risk Factors of Avian Influenza in Jakarta Province, Indonesia**  
**Bambang Sumiarto** (University of Gadjah Mada, Indonesia)
- O-18 Looking back upon the past avian, swine, and pandemic influenza —How are we prepared for avian and pandemic Influenza?—**  
**Hiroshi Kida** (Hokkaido University, Japan)

15:30 ~ **Closing speech**  
**Hiroshi Kida** (Professor of Graduate School of Veterinary Medicine and Director of Research Center for Zoonosis Control, Hokkaido University, Japan)

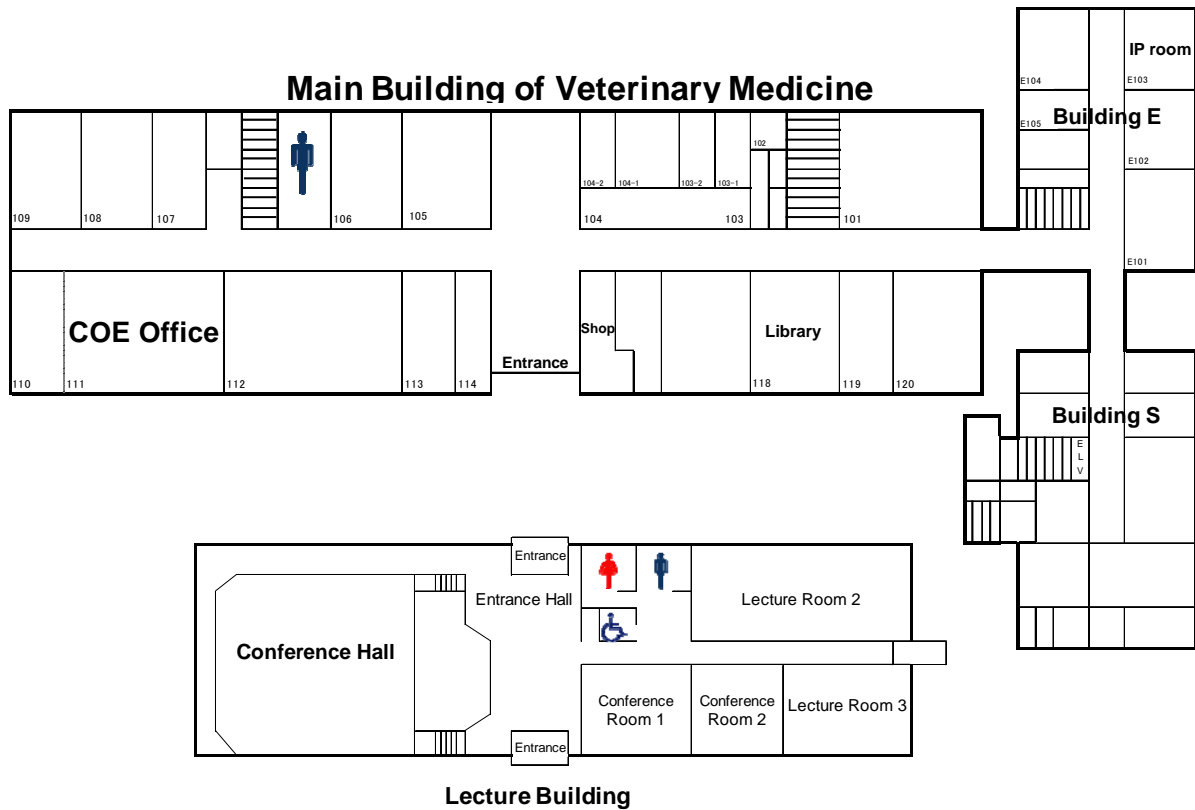
15:40 ~ 15:50 Coffee break

15:50 **Council meeting of AAVS**

# Venue:







**The meeting will be held at Lecture Building of Veterinary Medicine, Hokkaido University**

**Entrance Hall: Registration**

**Conference Hall: Presentation**

**Conference Room 1 & 2: Welcome reception on Sept. 21  
Council meeting of AAVS on Sept. 22**

# General Information & Guideline:

## **Oral presentation**

- The laptops running Windows XP Professional operating system, with MS Office 2007 and Macintosh OS X operating system, with MS Office 2004 will be equipped.
- You can have your presentation in your own personal laptop if you use "moving images" or special programs included in your Power Point.
- Please keep the time for the presentation to ensure smooth proceedings.
- Please bring your presentation loaded in USB thumb drive (flash disk) or CD-ROM at the registration desk on Sept. 21.

## **Accommodation in Sapporo for the invited speakers**

### **Sapporo Aspen Hotel**

Address/ 5, Kita8-jyo Nishi4-chome, Kita-ku, Sapporo,  
Hokkaido 060-0808 Japan

Phone +81 11-700-2111

FAX +81 11-700-2002

<http://www.aspen-hotel.co.jp/english/frame.htm>







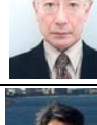

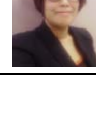
# List of AAVS Participants

# List of participants:

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1	Romziah Sidik		Indonesia	Airlangga University	romzi@unair.ac.id
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6	Conrado A. Valdez		Philippines	University of the Philippines Los Banos	cavaldez@uplb.edu.ph
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27	Tsutomu Sekizaki		Japan	The University of Tokyo	asekizak@mail.ecc.u-tokyo.ac.jp
28	Kazumi Sasai		Japan	Osaka Prefecture University	ksasai@vet.osakafu-u.ac.jp

# List of participants:

	Name		Nation	University	E-mail address
29	Shinji Yamasaki		Japan	Osaka Prefecture University	shinji@vet.osakafu-u.ac.jp
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31	Mitsumori Kawaminami		Japan	Kitasato University	mitsumor@vmas.kitasato-u.ac.jp
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33	Shinji Takai		Japan	Kitasato University	takai@vmas.kitasato-u.ac.jp
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36	Shigeo Ito		Japan	Hokkaido University	sito@vetmed.hokudai.ac.jp
37	Naoko Kagiya		Japan	Hokkaido University	kagyama@vetmed.hokudai.ac.jp
38	Mayumi Ishizuka		Japan	Hokkaido University	ishizum@vetmed.hokudai.ac.jp

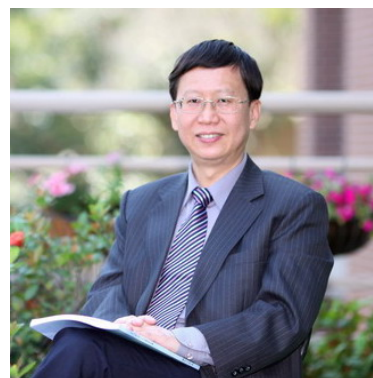
# **Session 1**

# **Animal Welfare**

**Chairperson**  
**Dr. Naoko Kagiya**

**Frank C. MAO**

Professor and Dean  
Department of Veterinary Medicine  
College of Veterinary Medicine  
National Chung Hsing University  
Taiwan  
fcmao@nchu.edu.tw



**ACADEMIC DEGREES:**

B.S. 1984 National Taiwan University (Animal Sciences)  
M.S. 1986 University of Wisconsin-Madison (Meat and Animal Sciences)  
Ph.D. 1991 University of Wisconsin-Madison (Endocrinology-Reproductive Physiology)

**PROFESSIONAL APPOINTMENTS:**

2009—Now Dean, College of Veterinary Medicine, National Chung Hsing University  
2006—2009 Chair, Department of Veterinary Medicine, National Chung Hsing University  
2002—2006 Director, Office of Student Assistantship, National Chung Hsing University  
2000—2002 Director, Office of Student Career Counseling, National Chung Hsing University  
1991– 2004 Associate Professor, Department of Veterinary Medicine, National Chung Hsing University  
2004—Now Professor, Department of Veterinary Medicine, National Chung Hsing University  
Examination officer committee member and Convener, Qualification Examination for Veterinarians  
Reexamining Members of the Committee of Grant Affairs, National Science Council  
Convener of the Life Science and Agriculture Committee of Industry-Academy Co-operation Grant Affairs, National Science Council  
Standing Board Member, Chinese Society of Veterinary Science, Taiwan Association of Veterinary Medicine and Animal Husbandry, Chinese-Taipei Society Laboratory Sciences

**RESEARCH INTERESTS:**

Animal Physiology, Animal Genetics, Diabetes, Obesity, Metabolic Disorders



## **O-1 Some Animal Welfare Issues in Taiwan**

**Frank Chiahung Mao**

Professor and Dean, College of Veterinary Medicine,  
National Chung Hsing University, Taichung, Taiwan

Animal welfare is a responsibility that includes consideration for all aspects of animal well-being, including proper housing, management, nutrition, disease prevention and treatment, responsible care, humane handling, and humane euthanasia. In Taiwan, the Animal Protection Act and the Enforcement Rules of Animal Protection were promulgated in 1998 and 2000. Animals included in this Act are economic animals, laboratory animals, pets and other kinds of animals. College courses, symposium, and forum are routinely held to implement animal welfare in experimental, domestic and companion animals.

To investigate the influence of the Animal Protection Act on stray dogs, a national census of street dogs was undertaken in 1999, 2004, and 2009. The population ratio of street dogs to humans for the three surveys were 2.82 dogs/100 people, 0.53 dogs/100 people, and 0.37 dogs/100 people respectively. However, the number of dogs that entered animal shelters from 1999 to 2009 has been conversely on the rise. Additionally, the detection rates of positive rabies antibodies in household dogs and stray dogs indicate that the origin of stray dogs in Taiwan is mainly due to owner abandonment. Possible reasons for the decrease of street dogs are: catching and sheltering of stray dogs as required by the Act, and the deprivation of a food source for stray dogs due to the enforced ban on household refuse being left out on public sidewalks nationally since 1999. Although the population ratio of street dogs is reduced, the education on animal welfare and the responsibility of dog ownership is still needed importantly.

## **Naoko KAGIYAMA**

Specially Appointed Professor,  
Laboratory Animal Welfare  
Graduate School of Veterinary Medicine  
Hokkaido University, Japan  
Visiting Scientist,  
Central Institute for Experimental Animals  
Advisor,  
RIKEN Center for Developmental Biology  
kagiya@vetmed.hokudai.ac.jp



### **ACADEMIC DEGRES:**

B.S.	1963	Hokkaido University (Veterinary Science)
DVM.	1963	Ministry of Agriculture and Forestry (Veterinarian)
PhD	1987	Hokkaido University

### **FACULTY APPOINTMENTS:**

Specially Appointed Professor

### **ADMINISTRATIVE APPOINTMENTS:**

1965-1967	Researcher, National Institute of Health
1971-	Chief, Laboratory Animal Medicine, Central institute for Experimental Animals
1992-2001	Chief, Veterinary Care and Comparative Biology, Novartis Pharma
2001-2003	Research Advisor, GraxoSmithKlein
2002-	Advisor, RIKEN Center for Developmental Biology
2003-	Visiting Scientist, Central Institute for Experimental Animals
2004-2006	Specially appointed Researcher, National Institute of Nature Sciences
2004-	ad hoc Specialist, AAALAC International
2007-	Governing Board, International Council for Laboratory Animal Science

### **RESEARCH INTEREST**

Infectious disease prevention, Development of diagnostic kits, Practical bioethics, Laboratory animal facility design and management

## **O-2 Proper Conduct of Animal Experimentation – Education for Veterinary Students -**

**Naoko Kagiya & Shigeo Ito**

Hokkaido University Graduate School of Veterinary Medicine

Laboratory animals are covered in the “Law for the Humane Treatment and Management of Animals” in Japan (1973, amended in 2005). Based on the Law, “Standards Relating to the Care and Management of Laboratory Animals and Relief of Pain” were established (2006). Scientific procedures involving animals are not directly regulated by the Law but the 3R-Principle, stipulated by the Law, is applied. Based on the 3R-Principle, basic policies of animal experiments were established by science-promoting ministries (2006). Simultaneously the guidelines for proper conduct of animal experiments were formulated by the Science Council of Japan (SCJ) as a viral reference for the basic policies.

The SCJ guidelines emphasize that **“For progress in life science, it is recommended to have a voluntary system of animal experimentation under the responsibility of researchers who best understand the necessity of such experimentation.....Japan favors the establishment of a system based on Japanese customs. With such a system, it is always hoped that animal experimentation will be promoted appropriately with the understanding of the people and will continue to advances in life science research.”**

Thus education and training of researchers is pivotal for implementing animal welfare. Obviously, animal welfare for laboratory animals should be based on science. Between 50 to 70% of our under graduates and more than 90% of graduates are currently working as researchers for universities, research institutes, and pharmaceutical companies. Therefore, we think education of students aiming at researchers extremely important. For this reason, we have established the following educational programs.

Our students have to prepare animal experiment protocols for their graduation theses in their fifth grade. Teachers educate them how to describe animal experiment protocols based on the 3R-Principle. These protocols are double checked by the Institutional Animal Care and Use Committees (IACUCs) of veterinary school and university. Our veterinary school has prepared a unique retrieval system of pain categories of animal experiments. IACUC of veterinary school prepared a tailor-made inventory of experimental procedures where the severity of pain and/or distress in animals is defined by procedure, and students learn why and how. We believe that this idea is also useful for the students of AAVS to understand science-based laboratory animal welfare.

**Parntep RATANAKORN**

Associate Professor, Dr.  
Division of Faculty of Veterinary Science  
Graduate School of Mahidol University  
Thailand  
vsprt@mahidol.ac.th



**ACADEMIC DEGREES:**

M.Sc. 1980 (Pathobiology), Mahidol University (Pathobiology)  
D.V.M. 1978 Kasetsart University (Veterinary Medicine)  
BSc. 1976 Kasetsart University (Zology)

**PROFESSIONAL APPOINTMENTS:**

1981 – present Lecturer in Exotic pet medicine, Zoo and Wildlife medicine for veterinary students in various veterinary schools in Thailand.  
1994 – 1998 President of The Veterinary Practitioner Association of Thailand (VPAT)  
1997 – 2000 Executive board member of The Thai Veterinary Medical Association (TVMA)  
1998 – 1999 Editor, Journal of The Veterinary Practitioner Association of Thailand  
1998 – 2007 Associate Professor and Dean, Faculty of Veterinary Science, Mahidol University  
2002 – 2004 Executive board member of Zoological Park Organization under Royal Patronage.  
2002 – 2007 Executive board member of The Veterinary Council of Thailand  
2003 – present Director of The Monitoring and Surveillance Center for Zoonotic Disease on Wildlife and Exotic Animals (MoZWE)  
2009 – present Deputy Dean for Technical Services

**RESEARCH INTERESTS:**

Animal Welfare : Laboratory animal, Wildlife  
Zoo and Wildlife Medicine  
One Health  
EID in Wildlife

### **O-3 Animal Welfare of Experimental and Domestic Animals Initiative in Mahidol Veterinary School**

**Parntep Ratanakorn**

Associate Professor, Department of Clinical Science and Public Health,  
Faculty of Veterinary Science, Mahidol University

Animal Welfare in Thailand has been recognized and became hot issued in Thai society for number of years. But the problems concerning to companion food and experimental animal welfare still occurred from time to time. At the present time, general animal welfare act is drafted and revised. Experimental animal welfare act is separated and incharged by National Research Council of Thailand (NRCT) while the rest are incharged by Department of Livestock Development (DLD). In Mahidol University, Faculty of Veterinary Science initiate animal welfare in various modes such as lecture (infiltrate into several subjects) practice (laboratory work and clinical practice) implementation (establishment of IACUC) and etc. We do hope to strengthen animal welfare in our institute as well as Thai Society by establishing of “Center for Animal Welfare Studies” (CAWS) which will convey animal welfare knowledge from research to practical fieldwork, “From Bench to Barn”.

## Harry ROZMIAREK



Professor Emeritus,  
Laboratory Animal Medicine  
School of Veterinary Medicine  
University of Pennsylvania  
Director LAF, Fox Chase Cancer Center  
U.S.A.  
rozmiar@pobox.upenn.edu

### ACADEMIC DEGREES:

B.S.	1960	University of Minnesota (Veterinary Science)
DVM.	1962	University of Minnesota (Veterinarian)
M.S.	1969	The Ohio State University (Laboratory Animal Medicine)
Ph.D.	1974	The Ohio State University (Microbiology/Immunology)
M.S.	1987	University of Pennsylvania (Honorary)

### FACULTY APPOINTMENTS:

1979-1983	Adjunct Associate Professor, College of Medicine, The Penn State University
1983-1987	Professor, Laboratory Animal Medicine, The Ohio State University
1987-2004	Professor, Laboratory Animal Medicine, University of Pennsylvania
2002-2007	Adjunct Professor, Shanghai Society for Biomedical Research
2002	Visiting Professor, Cambridge University
2004-	Professor Emeritus, Laboratory Animal Medicine, University of Pennsylvania
2006-2009	Visiting Professor, Ross University School of Veterinary Medicine

### ADMINISTRATIVE APPOINTMENTS

1962-1964	Attending Veterinarian, USA Dispensary, Pentagon, Washington, DC
1965-1967	Post Veterinarian, Fort Wadsworth, Staten Island, NY
1969-1972	Chief, Veterinary Medicine & Surgery, Edgewood Arsenal, MD
1971-2010	AAALAC International (Chair, Board of Trustees 2005-2009)
1972-1974	Director, Laboratory Animal Medicine, USA Medical Research Laboratory, Southeast Asia Treaty Organization (SEATO), Bangkok, Thailand
1976-1983	Chief, Animal Resources Division, US Army Medical Research Institute of Infectious Diseases (USAMRIID), Fort Detrick, Frederick, MD
1981-1989	House of Delegates, American Veterinary Medical Association (AVMA)
1983-1984	President, American Association for Laboratory Animal Science (AALAS)
1983-1987	Director, Office of University Laboratory Animal Resources and University Veterinarian, The Ohio State University, Columbus, OH
1983-1987	Director, Office of University Laboratory Animal Resources and University Veterinarian, University of Pennsylvania, Philadelphia PA
1991-1992	President, American Association of Laboratory Animal Practitioners (ASLAP)
1998-1999	President, American College of Laboratory Animal Medicine (ACLAM)
2003-	Director, Laboratory Animal Medicine, Fox Chase Cancer Center, Phila, PA
2003-2011	National US Representative, International Council for Laboratory Animal Science (ICLAS)

### RESEARCH INTERESTS:

Infectious Disease Immunology, Gnotobiology, Research Animal Facility Design and Management, Malaria Vaccine Development, Laboratory Animal Medicine Education

## **O-4 Animal Welfare Education in US Veterinary Schools**

**Harry Rozmiarek, DVM, PhD, DAACLAM**

Professor Emeritus, Laboratory Animal Medicine

School of Veterinary Medicine, University of Pennsylvania, USA

Animal Welfare education is provided in different ways at each of the schools, some by instructors within the school and others coming from other schools on the same campus and still others coming from outside the university. Most schools do not have a separate department or unit of animal welfare, and when they do it often is at the graduate level in animal science departments and not included in the veterinary core curriculum. Law and ethics classes frequently include animal welfare issues for all types of animals as well as other subjects. This presentation will include the results of a survey of veterinary schools in North America and how animal welfare is provided to veterinary students at their school.

Animal welfare for animals used in research, teaching and testing in the United States is assured through a dual system of assurance administered by the United States Department of Agriculture and the US Public Health Service. Both require the ethical review, approval and oversight of all animal use by a local committee which reports to an Institutional Official as well as reporting directly to both assuring agencies. The Department of Agriculture also includes a regular inspection service while the PHS depends primarily upon local committee activity and written reports. All student use of animals is included under these programs and veterinary students receive training provided as required, but this is not usually a separate subject or part of the core veterinary curriculum. Two publications are used as primary references for research animal welfare; The Guide for the Care and Use of Laboratory Animals and the Guide for the Care and Use of Agricultural Animals in Research and Teaching. These, along with animal cruelty laws in every state provide a framework for animal welfare information in the United States.

An independent accrediting agency active in the United States since its inception in 1965 is the Association for the Assessment and Accreditation for Laboratory Animal Care, International (AAALAC). AAALAC accreditation is not required by either law or policy, but 681 programs in the country participate in the AAALAC accreditation program and its activity has expanded since 2005 to include 122 international programs in 31 other countries. At least 22 of the 27 veterinary schools in the United States are currently accredited by AAALAC.

The American Veterinary Medical Association (AVMA) has recognized the need to improve the teaching of animal welfare in veterinary schools, and in 2010 will be establishing an AVMA Planning Group for Development of a Model Animal Welfare Curriculum for Colleges/Schools of Veterinary Medicine. This should provide valuable guidance to veterinary school curriculum planners who have the challenge of adding another course to an already full veterinary curriculum.





# **Session 2 Environmental Toxicology & Others**

**Chairperson  
Dr. Mayumi Ishizuka**

## Mongkol TECHAKUMPHU

Professor  
Department of Obstetrics Gynaecology and Reproduction  
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Chulalongkorn University  
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### ACADEMIC DEGREES:

Bachelor degree	1975-1981	Faculty of Veterinary Science, Chulalongkorn Univ.	B.Sc. Animal Science D.V.M
Master degree	1982-1983	University of Paris VI (Paris, France)	Diplome d'Etude Approfondies (DEA)
Doctorate degree	1983-1986	University of Paris VI (Paris, France)	Doctorat de 3e cycle (Physiology of Reproduction)
Post Doctorate	1991-1992	Biology du Development, INRA, Jouy-en-Josas, France	Biotechnology in Reproduction

### PROFESSIONAL APPOINTMENTS:

1988 - 1990 Lecturer, Faculty of Veterinary Science, Chulalongkorn University  
1989 - 1990 Associate Professor, Faculty of Veterinary Science, Chulalongkorn University  
2002 - present Professor, Faculty of Veterinary Science, Chulalongkorn University

### RESEARCH INTERESTS:

Farm Animal Reproduction  
Biotechnology in Reproduction

## **O-5 The Researches in Appropriate Reproductive Technology for Animal Production Improvement, Wildlife Conservation and Biomedical Application**

**Mongkol Techakumphu**

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Bangkok, Thailand

The development of new methods of reproductive biotechnologies (RBs) in mammals is creating many new opportunities in research, medicine, wildlife conservation and agriculture. The methods of RBs is repeatable and has been established in many laboratories worldwide including in Thailand. Various of reproductive biotechnologies were developed such as artificial insemination (AI), embryo transfer (ET), embryo cryopreservation, in vitro maturation and in vitro fertilization (IVM-IVF), ovum pick-up (OPU), somatic cell nuclear transfer (SCNT), stem cells and related techniques were developed during the last 50 years. However, only some of these techniques can be successfully implemented in animal production as well as human biomedicine. AI is widely used in swine and cattle industry and some wild endangered species including for infertile solving in human. The other techniques, ET, IVF, Cloning are not well used due to a high cost and some are not suitable to our productive system. However, the possibilities to set up the model of implementation and to do research on the new techniques such as semen freezing, ovarian control and therapeutic cloning will be a considerable usefulness, required for livestock improvement, wildlife conservation and biomedicine.

Since 2007, four research work-packages; WP1: semen freezing, WP2: physiology of female reproduction, WP3: ART in wild life and WP4: embryonic stem cells were intensively studied through a three-year support of The Thailand Research and the Commission on Higher Education (TRF-CHE Senior Research Scholar). The main objectives were to develop and implement the reproductive biotechnology for animal production, wildlife conservation and biomedical application. Various outcomes of this project were such as a number of international papers ( $n \geq 30$ ), abstracts ( $n \geq 50$ ) and conferences were produced from the project including the young scientists ( $n \geq 10$ ) and the collaborative networks, locally and internationally, a mutual collaboration with private and public organizations occurred. In addition to the specificity of each of them, one major point is that end users, farmers, breeders, clinicians may choose either collectively or individually, the best technology to be used in order to achieve the goals they have set for their organization.

Key words: reproductive biotechnologies, animal production, wildlife conservation and biomedicine

## **Bolormaa PELDEN**

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### **ACADEMIC DEGREES:**

B.A.	1989	Zoo-veterinary Institute, Alma-Ata, Kazakhstan (Veterinarian)
M.A.	1989	Zoo-veterinary Institute, Alma-Ata, Kazakhstan (Veterinarian)
Ph D.	1997	Mongolian State University of Agriculture (Veterinarian)
Sc.D	2005	Mongolian State University of Agriculture (Veterinarian)

### **PROFESSIONAL APPOINTMENTS:**

1989 – 2005	Lecturer, School of Veterinary Medicine and Biotechnology, MSUA
2005 –	Director, School of Veterinary Medicine and Biotechnology, MSUA

### **RESEARCH INTERESTS:**

Veterinary pharmacology, toxicology, immunology, medicinal and toxic herbs

## **O-6 Veterinary Public Health in Mongolia**

### **Bolormaa Pelden**

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Agency of Veterinary and Breeding

Veterinarians are the exclusive or nearly exclusive provider of health services to the farmer and herder, and they need special training to be uniquely qualified. In case of infectious diseases and control of zoonosis needs local structure and continuing activities. Current professional isolation in developing countries incapacitates specialists and technicians in demands of modern world. VPH must turn towards integrations joining food chain and environmental health partners in systems ensuring quality and safety. Such integration though still in its beginning, is being introduced. Now it becomes one of concerns of veterinarians of developing countries. The weakness still exist are lack and shortage of resources as well as skilled personal and laboratory provisions and needed equipment.

The zoonoses could be easy to be eradicated through compensation of culled stocks and proper utility of resources and personal with legal tools and information available.

The zoonoses problem was recognized in many years. Not only population but also high officials and parliament and its cabinets are unaware that the activities of veterinarians which are often multipurpose and have multiple impacts to human health. The problem is that also the veterinary administration and leading personal in leading administrative positions sometimes are unaware of their responsibility concerning public health in connection with animal health. In order to get support from administration, veterinarians need to prepare studies and review and provide recommendations to assist policy makers in their continuing evaluation of national health situation and implementation of programs and auditing their involvement in comparing to the results achieved.

Another important impetus in the program is to involve the people and consumers who are the end users of animal production and they have a right to claim over their health and safety living. Their voice is always important to get supported to initiate legislation or improve existing laws, through organized way with producer and consumer associations.

The public media is the best tool to educate the people and organize a distant education. Finally Mongolia is potential to invest the eradication programs of zoonoses in concern of VPH and also to consider that zoonoses are been used as bioterrorist tool to the human in the world.

## **Mayumi ISHIZUKA**

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### **ACADEMIC DEGREES:**

B.A. 1994 Hokkaido University (Veterinary Medicine)  
Ph.D. 1998 Hokkaido University (Veterinary Medicine)

### **PROFESSIONAL APPOINTMENTS:**

1998 - 1999 Research Fellow of the Japan Society for the Promotion of Science  
1999 - 2000 Researcher, National Institute for Environmental Studies  
2000 - 2004 Assistant Professor, Graduate School of Veterinary Medicine,  
Hokkaido University  
2004 - 2010 Associate Professor, Graduate School of Veterinary Medicine,  
Hokkaido University  
2010 - Professor, Graduate School of Veterinary Medicine, Hokkaido University

### **RESEARCH INTERESTS:**

Areas of the interest include toxicology and environmental toxicology; particularly the species/strain differences in sensitivity to environmental chemicals.

## **O-7 The Environmental Pollution in African Countries: Effects of Heavy Metals Observed in Wild / Domestic Animals Inhabit in Mining Areas in Zambia**

**Mayumi Ishizuka**

Professor, Department of Environmental Veterinary Sciences,  
Graduate School of Veterinary Medicine, Hokkaido University

The African continent has experienced rapid economic development during the last decade. Unfortunately, this has also led to an increase in environmental pollution. Of these chemical pollutants, heavy metal contaminants are now a significant health hazard in many African countries. Humans and wildlife are exposed to heavy metals in drinking water, air and soil because of contamination from anthropogenic activities such as mining and metal smelting. In many instances, mining operations have no containment measures. Generally, unless countermeasures are taken, heavy metal pollution is long lasting because the metals do not biodegrade. Exposure to toxic elements such as lead (Pb), cadmium (Cd), and arsenic (As) can cause serious health effects in humans and animals. Therefore, it is important to assess the level of environmental heavy metal contamination.

Recently, we have collaborated with universities in several African countries for survey the environmental pollution in their countries and elucidation of their effects on human beings and animals. The Republic of Zambia is one of the African countries that are rich in mineral resources such as copper (Cu), cobalt (Co), zinc (Zn), and lead (Pb). Mining is the most important industry of Zambia. In 1997, Zambia contributed 3 % and 20 % of the world's annual production of Cu and Co, respectively. Furthermore, the majority of these metals were smelted within the country. As a result, toxic metals pollution is the biggest environmental issue in Zambia. Consequently, toxic metals pollution has become a big environmental challenge in Zambia, especially mining area such as Kabwe and Copper belt region, with serious health implications for humans and animals.

This presentation will introduce our collaborative research and activities in Zambia. In this study, our objective is to identify the relationship between toxic metals accumulation in wild / domestic animals and the soil contamination in Zambia, as a typical model of heavy metal pollution by mining activity.





# **Session 3**

# **Food Safety**

**Chairperson**  
**Dr. Tsutomu Sekizaki**

## **Romziah SIDIK**

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### **ACADEMIC DEGREES:**

DVM 1978 Airlangga University (Faculty of Veterinary Medicine, Indonesia)  
Ph.D. 1987 University Putra (before: Pertanian) Malaysia (Faculty of Veterinary  
Medicine and Animal Science)

### **PROFESSIONAL APPOINTMENTS:**

1978 - 2005 Lecturer, Faculty of Veterinary Medicine, Airlangga University, Indonesia.  
2005 Professor, Faculty of Veterinary Medicine, Airlangga University, Indonesia.

### **RESEARCH INTERESTS:**

Animal Nutrition and Production

## **O-8 Effects of Goat Milk Peptide on Profile of Malondialdehyde (mda) and Superoxide Dismutase (sod) Activities of Lung Cancer Rat**

**\*Romziah, S.; Anwar, M and Retno, S.W.**

Professor, Division of Animal Production  
Faculty of Veterinary Medicine, Airlangga University

Goat milk protein with 42 kDa can be promoted as milk protein candidate that produce milk peptide which has anti-carcinogenic effect. Goat milk peptide elution given orally on *Rattus novergicus* with pulmonary cancer, it may reduced the free radical matter on lung cancer tissues that was indicated by reducing level of Malondialdehyde (MDA) activity in the tissues (from 3.28 to 2.55 ppm). It followed by increasing level of Superoxide Dismutase (SOD) to release free radical matter and as an anti-oxidant on lung cancer of *Rattus novergicus* from 31.14 to 52.49 U/ml.

**Key word:** goat, milk peptide, Malondialdehyde (MDA), Superoxide Dismutase (SOD), lung cancer, *Rattus novergicus*.

## **Conrado A. VALDEZ**

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### **ACADEMIC DEGREES:**

D.V.M.	1974	University of the Philippines Diliman (Veterinary Medicine)
M.S.	1989	Hokkaido University (Theriogenology)
Ph.D.	1992	Hokkaido University (Theriogenology)

### **PROFESSIONAL APPOINTMENTS:**

1974 – 1975	Research Veterinarian, Animal Disease and Parasite Research Division, Bureau of Animal Industry (BAI)
1975 – 1976	Research Associate, Dairy Training and Research Institute, University of the Philippines Los Baños (UPLB)
1976 – 1988	Officer-in-Charge, Dairy Husbandry Section, Dairy Development Division, BAI
1989 – 1993	Senior Agriculturist, Department of Agriculture Region IV
1993 – 1997	Assistant Professor, College of Veterinary Medicine (CVM), UPLB
1997 – 2005	Associate Professor, CVM-UPLB
1998 – 2004	Director, Veterinary Teaching Hospital, CVM-UPLB
2004 – to date	Dean, CVM-UPLB
2005 – to date	Professor, CVM-UPLB
2009 – to date	Scientist I, University of the Philippines System

### **RESEARCH INTERESTS:**

1. Cryopreservation of semen and embryos of domestic animals
2. Reproductive diseases of domestic animals
3. External body measurements of domestic and wild animals
4. Environmental animal health and production

## O-9 Food Safety Issues in the Philippines

**Conrado A. Valdez**

Dean, College of Veterinary Medicine  
University of the Philippines Los Baños

Food safety has now become a global concern brought about by global trade liberalization, increased travel and rapid urbanization in many countries of the world. In the Philippines, the changing consumer patterns especially the demand for convenience food has contributed to food safety concerns. There are at present several existing local institutions connected with food inspection, surveillance and monitoring which form a network to address food safety concerns. The main agencies are the National Meat Inspection Service, Bureau of Animal Industry, National Food Authority, Bureau of Plant Industry, and Philippine Food and Drug Administration.

However, several local issues/problems remain concerning food safety such as the occurrence of residues in foods of animal origin; residues of pesticides, heavy metals in plant food products; development of antimicrobial drug resistance of food-borne pathogens; lack of adequate monitoring and surveillance of pathogens in food for human consumption; lack of adequate implementation of rules and regulations or lack of compliance by producers/processors; food spoilage; lack of coordination among agencies involve with food safety; food borne illnesses and intoxications; and recently the occurrence of emerging pathogens.

To address some of these concerns, the University thru the College of Veterinary Medicine has conducted several researches related to food safety. The completed researches are studies on the occurrence of salmonella in food of animal origin; occurrence of *Campylobacter jejuni* in premarket and market poultry; detection of antibiotic residues in foods of animal origin; molecular detection of zoonotic pathogens in foods of animal origin; study of antibiotic resistance profile of local isolates of *Salmonella* spp. *Escherichia coli* and *Campylobacter jejuni*; and serological detection of zoonotic diseases (Q-fever, TB, Brucellosis) in ruminants.

In the future, the College plans to establish a food safety facility; network with other universities and agencies on research and training on food safety; conduct researches on improved detection methods for food-borne pathogens; enhance science-based risk management and risk communication for control and prevention of food borne diseases and food safety concerns; establish a database for high-risk food-borne pathogens especially those in foods of animal origin; and conduct consumer education program to promote food safety through consumer advocacy.

## **Suneerat AIUMLAMAI**

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### **ACADEMIC DEGREES:**

DVM.	1985	Chulalongkorn University, Thailand
F.R.V.C.S.	1987	Animal reproduction Swedish University of Agricultural Sciences (SLU), Sweden
Ph.D.	1991	Ruminant reproduction Swedish University of Agricultural Sciences (SLU), Sweden

### **PROFESSIONAL APPOINTMENTS:**

1985 - 1997	Bovine Practitioner, Dairy Farming promotion Organization of Thailand
1997 -	Lecturer at Department of Surgery and Theriogenology, Faculty of Veterinary Medicine, Khon Kaen University
2004 -	Associate Professor, Faculty of Veterinary Medicine, Khon Kaen University
2007 -	Dean of the Faculty of Veterinary Medicine, Khon Kaen University

### **RESEARCH INTERESTS:**

Dairy Production: Reproduction, Mastitis and Milk Quality

## O-10 Milk Quality in Thailand

**Suneerat Aiudlamai**

Assoc.Prof. Dr., Department of Surgery and Theriogenology  
Dean of the Faculty of Veterinary Medicine, Khon Kaen University, Thailand

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Thai dairy farming has been carried out for over 50 years. Most dairy farms (71%) are classified as small holder dairy farms (<20 lactating cows) of which replacement heifers are up to 60% in each farm. Cross-bred Holstein Friesian-Native (tropical) cow is a major breed, which Holstein blood line (*Bos taurus*) is over 87.5% and accounted for up to 70.0% of animals on farms. Department of Livestock Development (DLD) sampled bulk milk during 2007-2008 and reported that milk from 40% of dairy farms contained average somatic cells higher than 500,000 cells/ml. The examination of milk components showed average fat and protein contents that were less than standard, 3.2% and 2.8%, respectively in 20% of the farms and average total solids percentage was less than 12.00 in 50% of the farms. A report from DLD Sire Summary 2009 showed that average milk production in individual cow in Thailand was  $3,821 \pm 1057$  kg/lactation and the average fat and protein content was  $3.66 \pm 0.68\%$  and  $3.17 \pm 0.31\%$ , respectively.

Several studies were conducted in Thailand, *Staphylococcus aureus*, *Streptococcus agalactiae*, coliforms, environmental streptococci and coagulase negative staphylococci have been reported as microorganisms causing clinical and subclinical mastitis. Milking hygiene, mastitis control program and proper milking machines are main factors contributing to mastitis in Thailand.

Limited and improper feeding may account for the poor milk quality since they increase the risk of production diseases such as rumen acidosis, negative energy balance, mastitis, metritis, retained placenta and repeated breeder. Nutrition and feeding of dairy cattle are key success factors of dairy farming in Thailand. Feeding practices by smallholder farmers are simple and depends on available feed resources in various seasons. Shortage of fresh roughage in dry season generally occurs. Rice straw is commonly used almost 6-8 months per year in many regions. Supplement of concentrate is offered in all dairy farms, mostly separated from roughage and the concentrate to roughage ratio is too high. Crop-residues and industrial by-products could be used in many regions. Performance of cows in milk production, milk quality, reproduction and growth are related to feeding practices and nutrition.

The update and continuing studies of milk quality from small holder dairy farms and dairy cooperatives still showed similar figures. These reports indicated that milk quality must be essentially concerned for Thai dairy industry since it reflects farm and feeding management in small holder dairy farms in Thailand. Dairy herd health and production management programme (HHPM) is a tool to improve the cattle health and milk quality at farm levels. Good manufacturing practice (GMP) at milk collecting center and dairy plants also play important roles for sustainable dairy industry in Thailand.

**Keywords:** Milk quality, feeding, dairy cattle, Thailand

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### ACADEMIC DEGREES:

B.A. 1978 Seoul National University (Vet. Medicine)  
M.A. 1981 Seoul National University (Vet. Pharmacology)  
Ph.D. 1991 Washington State University (Vet. Microbiology)

### PROFESSIONAL APPOINTMENTS:

1978 - 1995 Research Scientist, National Veterinary Research Institute, Korea  
1993 - 1995 Director, Department of Bacteriology/Immunology, National Veterinary Research Institute, Korea  
1995 - present Professor, Department of Microbiology, College of Veterinary Medicine, Seoul National University, Korea  
1996 - present Adjunct Professor, Department of Veterinary Microbiology/Pathology, College of Veterinary Medicine, Washington State University, USA  
2000 - present Affiliate Professor, Department of Microbiology, Molecular Biology & Biochemistry, College of Agriculture, University of Idaho, USA  
2002 - 2006 President, The Korean Society of Bovine Mastitis and Milk Quality  
2003 - present National Committee for Antibiotic Resistance Management, Korea  
2005 - 2006 President, The Korea Society of Veterinary Public Health  
2007 - 2009 Dean, College of Veterinary Medicine, Seoul National University, Korea  
2007 - 2009 President, Council for Korean Veterinary Education  
2007 - 2009 Chairman, SNU Bio-CEO Program, Korea  
2007 - present Fellow, The Korean Academy of Science and Technology  
2008 - present National Food Safety Policy, Committee at Prime Minister's Office  
2008 - present President, Asian Association of Veterinary Schools (AAVS)  
2008 - present Chair, The Korean Society of Veterinary Science (KSVS)  
2009 - present National Science and Technology Committee, Agriculture, Fishery, Forest and Food, Korea  
2009 - present President, The Korean Society of Food Hygiene and Safety  
2010 - present President, Korean Society for Zoonoses

### RESEARCH INTERESTS:

1. Food-borne pathogen: detection, development of detection kit, antimicrobial resistance test, epidemiology
2. Staphylococcal enterotoxins (SEs)
3. Hazard Analysis Critical Control Point (HACCP)
4. Antibiotic-resistant bacterial pathogens in food safety
5. Antimicrobial analysis of probiotics
6. Antimicrobial substitute: Research and Analysis
7. Zoonosis pathogens: detection, antimicrobial resistance test, epidemiology



## O-11 Zoonosis and Food Safety in Korea

**Yong Ho Park**

Professor, Department of Veterinary Microbiology  
College of Veterinary Medicine, Seoul National University

The World Health Organization (WHO) defines zoonotic diseases as “Those diseases and infection which are naturally transmitted between vertebrate animals and man”. Depending on the life cycle, mode of transmission can be divided into following categories: 1) Direct Zoonoses (transmitted from infected vertebrate host to a susceptible vertebrate host by direct contact, fomite or a mechanical vector: Rabies, trichinosis and brucellosis), 2) Cyclozoonoses (requires more than one vertebrate host, but no invertebrate host: Human taeniasis, echinococcosis and Pentastoma infections), 3) Metazoonoses (agent multiplies, develops, or both in an invertebrate host before transmission to a vertebrate host is possible: arboviruses, plague and schistosomiasis), 4) Saprozoonoses [to transmit these infections a non-animal development site or reservoir (food plants, soil, or other organic material) is required: larva migrans and some of the mycotic diseases]. Some of the examples of zoonotic diseases can be classified into 5 different categories, which includes bacteria, parasite, rickettsial diseases, viruses, and unconventional agents.

With habitats of human, domestic animal, and wildlife being more and more overlapped, interaction patterns between wild and domestic animals and humans have been modified in recent years. In such an environmental situation, we are facing changes in disease transmission between animals and humans. We have already seen an increase in incidence of previously identified zoonoses, but the recent epidemic crises associated with the emergence of new zoonotic diseases such as severe acute respiratory syndrome (SARS) and avian influenza emphasize our need to understand and control disease emergence.

The world is experiencing a period of unprecedented infectious disease emergence. Nearly half of all human infectious diseases known today can be classified as emerging. These are diseases that 1) have been newly discovered; 2) have recently increased in incidence or prevalence; 3) have recently expanded in geographic or climatologic range; or 4) have jumped from animal populations into humans. This differs somewhat from reemerging infectious diseases, which are diseases that have been discovered previously in a species and are often at enzootic levels in that species but, for some reason, have significantly increased in incidence at a given point in time or in a specific geographic region. Of those pathogens classed as emerging, approximately 75% are zoonotic, or of animal origin and West Nile virus are examples of emerging infectious diseases (EIDs) that have spilled over from animal reservoirs into humans.

Contrary to "lingering" zoonoses, public awareness of "emerging" zoonoses is very high. The WHO/FAO/OIE joint consultation on emerging zoonotic diseases held in Geneva, 3-5 May 2004, defined an emerging zoonosis as "a zoonosis that is newly recognized or newly evolved, or that has occurred previously but shows an increase in incidence or expansion in geographical, host or vector range". Emerging zoonotic diseases have potentially serious human health and economic impacts and their current upwards trends are likely to continue.

HIV, SARS (severe acute respiratory syndrome), monkey pox, avian influenza, Bovine Spongiform Encephalitis (BSE), Nipah virus and West Nile virus are examples of emerging infectious diseases (EIDs) that have spilled over from animal reservoirs into humans. Also some of the "lingering" zoonoses are re-emerging in some regions, although they seem to attract less public awareness. Bovine and canine brucellosis, tuberculosis, leptospirosis, rabies and many parasitic diseases such as cysticercosis/taeniasis and echinococcosis/hydatidosis are major concerned zoonotic diseases at this time.

Many factors lead to the emergence of zoonotic diseases. Environmental changes, human and animal demography, pathogen changes and changes in farming practice are a few of them. Social and cultural factors such as food habits and religious beliefs play a role too.

At this lecture, several bacterial, viral and parasitic zoonotic diseases occurring in animal or companion animal will be discussed with emphasis on risk factors for transmission of each zoonotic disease.

## **Tsutomu SEKIZAKI**

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### **ACADEMIC DEGREES:**

B.S. 1978 Hokkaido University (Veterinary Medicine)  
M.S. 1980 Hokkaido University (Veterinary Medicine)  
Ph.D. 1985 Hokkaido University (Veterinary Medical Sciences)

### **PROFESSIONAL APPOINTMENTS:**

1980 - 1989 Researcher, National Institute of Animal Health, Japan  
1985-1986 Postdoctoral Fellow, University of Geneva  
1989 - 1991 Senior Researcher, National Institute of Animal Health, Japan  
1991 - 2006 Laboratory Head, National Institute of Animal Health, Japan  
2006 - 2008 Research Team Leader, National Institute of Animal Health, Japan  
2008 - Professor, Research Center for Food Safety, University of Tokyo.  
2010 - Director, Research Center for Food Safety, University of Tokyo

### **RESEARCH INTERESTS:**

Dr. Sekizaki participated actively in the research of virulence factors and markers of bacterial pathogen from animal origins, including *Escherichia coli*, *Salmonella* Dublin, *Bacillus anthracis*, *Rhodococcus equi*, *Streptococcus suis*, and other zoonotic agents. He is interested in molecular genetics of those bacteria, particularly in genetic mechanisms to express their virulence and to provoke diseases in man and animals.

## **O-12 Launch, Organization and Activities of Research Center for Food Safety in University of Tokyo**

**Tsutomu Sekizaki**

Director, Professor, Research Center for Food Safety,  
Graduate School of Agricultural and Life Sciences, University of Tokyo, Japan

### **[Launch of the Research Center for Food Safety]**

In recent years, "Food Safety and Confidence" have become a great concern in many countries. During this challenging time, the Research Center for Food Safety (RCSF) has launched under the Graduate School of Agricultural and Life Sciences (GSALS), the University of Tokyo (UT) in November 2006. The RCSF is continuously engaged in research and education on food safety under close collaboration with national and international organizations, and thereby the RCSF is expected not only to contribute the research field but also to provide scientific expertise and information to the people, government and private sector. In July of 2009, the RCSF was endorsed as the OIE Collaborating Centre for Food Safety in Asia and Pacific regions. This gave another chance for the RCSF to provide its expertise to personnels from countries of OIE members. In this symposium, the current situation and future program of the RCSF will be presented.

### **[Organization of RCFS]**

At the time of launch, the RCSF has only eight starting members, all of them were recruited from GSALS, UT. The RCSF involves three research divisions: Risk assessment, Risk Control, and Information/Economics. The RCSF has now total of thirty teaching staffs: four full-time staffs (major in bacteriology, immune regulation and food Functionality); Six project professors from outside of UT; and twenty teaching staffs recruited from within the GSALS, UT. They are engaged in broad range of subject in food safety and confidence.

### **[Activities of RCFS]**

The RCSF specified its role to the following six fields, 1) Research on risk assessment, risk management, and risk communication of food safety, 2) Research on biological effects and its utilization of food containment, 3) Research on biological effects and its control of food contaminants, 4) Research on highly functional and low risk food, 5) Development and enlightenment of researchers, governors, and other professionals in the field of food safety, 6) Promotion of food-safety specialists and professionals in Asia and Pacific regions. The center also aims to develop leaders with high levels of knowledge and skill through the training of students from businesspersons.



# **Session 4**

# **Zoonoses**

**Chairperson**  
**Dr. Hiroshi Kida**

## Vincent HSIAO

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### ACADEMIC DEGREES:

B.V.M. 1994 National Taiwan University (Veterinary Medicine)  
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Ph.D. 2005 University of Illinois at Urbana-Champaign (Veterinary Pathobiology)

### PROFESSIONAL APPOINTMENTS:

2000 - 2003 Resident of Anatomic Veterinary Pathology, College of Veterinary Medicine, University of Illinois at Urbana-Champaign, USA  
2005 - 2007 Visiting Clinical Assistant Professor, Veterinary Diagnostic Laboratory, College of Veterinary Medicine, University of Illinois at Urbana-Champaign, USA  
2007 - 2008 Assistant Professor/Head of the Companion Animal Clinic, Department of Veterinary Medicine/Veterinary Teaching Hospital, National Chia-Yi University, Taiwan  
2008 - 2011 Assistant Professor/Head of the Wards, School of Veterinary Medicine/ Veterinary Hospital, National Taiwan University, Taiwan  
2011 - Clinical Assistant Professor, Veterinary Diagnostic Laboratory/Department of Pathobiology, College of Veterinary Medicine, University of Illinois at Urbana-Champaign, USA

### RESEARCH INTERESTS:

Pathophysiology and signaling pathways of sphingolipids, especially their roles in fumonisin mycotoxicosis and tumor necrosis factor  $\alpha$  induced cardiovascular dysfunction

Mycotoxicosis, Cardiovascular diseases in large animals, Novel anticancer compounds, Lipids in cellular signal transduction

## **O-13 Efforts Towards Free of Bovine Tuberculosis in Taiwan**

**Vincent Hsiao**

Assistant Professor

School of Veterinary Medicine, National Taiwan University

Efforts to eradicate bovine tuberculosis in Taiwan have been put into practice for decades. Especially in the recent years, the authority adopts a strict stamping-out policy to remove infected cattle from dairy herds. All dairy cattle are tested by an intradermal tuberculin test at least annually. All positive reactors are euthanized immediately. Necropsy is conducted on all the carcasses to retrieve tissue samples for pathology, culture and molecular diagnostic. Other cattle in the positive herds are subjected to ancillary serological and molecular tests to identify possible false negative reactors. Relevant environmental specimens are collected to determine their roles in the disease transmission. The result is that the prevalence declines and there are currently less than 0.1% of dairy cattle and less than 0.2% of dairy herds infected with *Mycobacterium bovis* in Taiwan. Similar efforts will expand to other rather minor cattle populations (beef cattle and water buffalo) to achieve a complete freedom of bovine tuberculosis in Taiwan.

## **Thavajchai SAKPUARM**

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Department of Veterinary Public Health  
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### **ACADEMIC DEGREES:**

B.Sc. 1975 (Veterinary Science) Kasetsart University, Thailand  
D.V.M. 1976 (Doctor of Veterinary Medicine) Kasetsart University, Thailand  
M.PH. 1984 (Urban Health) Mahidol University  
Ph.D 1990 (Veterinary Science) Azubu University, Japan

### **PROFESSIONAL APPOINTMENTS:**

1977 Instructor, department of veterinary Medicine, Kasetsart University  
1985 Assistant Professor  
1991-1996 Chief, Veterinary Diagnostic Laboratory, Faculty of Veterinary Medicine  
1996-1998 Vice Dean, Faculty of Veterinary Medicine  
1998-2006 Head Department of Veterinary Public Health and Diagnosis service, Faculty of Veterinary Medicine  
2007 Dean, Faculty of Veterinary Medicine Kasetsart University

### **RESEARCH INTERESTS:**

Emerging and re-emerging zoonosis which mainly Bacterial zoonotic disease eg. Salmonella spp. contamination in food from animal origin as well as Leptospirosis, Campyrobacter and so forth.



## **O-14 Serological Profile of Leptospirosis of Animals in Thailand**

**Thavajchai Sakpuaram**

Department of Veterinary Public Health, Faculty of Veterinary Medicine, Kasetsart University

Sero-prevalence of Leptospirosis of animals in Thailand were investigated by using microscopic agglutination test with 22 serovars *Leptospira* live antigen. The cut off point is the titer from and above 1:100 as positive titer.

Sera samples were collected from 807 dogs, and 37 cats, 45 elephants and 222 rodents, for these investigations. Percentage of sero-prevalence of Leptospirosis in dog, cat, elephant, rodent, were 51.9, 29.7, 57.7 and 32.7 respectively. Percentages of serovar positive of *Leptospira sp.* were demonstrated.

Comparison in habitat, Stray-dogs showed positive prevalence higher than housed dogs with significantly. Also, for the seasonal, the prevalence in rainy season is higher than out of rainy with significantly, but no-significantly difference between male and female groups.

## **Mohd Hair BEJO**

Professor, Dr  
Department of Veterinary Pathology and Microbiology  
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### **ACADEMIC DEGREES:**

DVM	1985	Universiti Putra Malaysia (Veterinary Medicine)
PhD	1990	University of Liverpool, England (Veterinary Pathology)
PostDoc	1993	University of Georgia, USA (Clinical Avian Medicine)

### **PROFESSIONAL APPOINTMENTS:**

1985 - 1987	Veterinary Officer (Small Animal Practice), Universiti Putra Malaysia
1987 - 1990	Tutor (PhD at University of Liverpool), Universiti Putra Malaysia
1991 - 1999	Lecturer, Faculty of Veterinary Medicine, Universiti Putra Malaysia
1999 - 2007	Associate Professor, Faculty of Veterinary Medicine, Universiti Putra Malaysia
2007 -	Professor (Veterinary Pathology and Avian Pathology) Faculty of Veterinary Medicine, Universiti Putra Malaysia

### **RESEARCH INTERESTS:**

- Immunosuppressive diseases in chickens especially in infectious bursal disease (IBD) and chicken anaemia virus (CAV).
- Important and zoonotic diseases in chickens especially *Salmonella enteritidis* (SE) and Avian pathogenic *E coli* (APEC).
- Development of conventional and new generation of vaccines against important poultry diseases
- Development of diagnostic kits for the detection and characterization pathogenic viruses and bacteria.

## **O-15 Emerging and Reemerging of Important Zoonotic Diseases in Malaysia**

**Mohd Hair-Bejo\* and Bashir Ahmad Fateh Mohamed**

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Emerging and reemerging of zoonotic diseases are an important and challenging health and economic issues worldwide. It is interesting to note that about 60% of human pathogens are of animal origin and 75% of emerging animal diseases can be transmitted to human. It is indeed a critical need for an approach that unites veterinary and human medicine. The first imported case of influenza A virus (H1N1) infection in Malaysia was reported in 15 May 2009, and in 21 June 2009 the first local transmission case was reported. Although, the numbers of cases are relatively low in the country, surprisingly the percentage of death is relatively high. Recently, a surveillance programme for swine influenza virus (H1N1) in pig farms in Malaysia did not identified and isolated H1 subtype of classical or pandemic H1N1. The present of antibodies against influenza H1N1 and H3N1 viruses among pigs were reported previously.

The country also experience outbreaks of highly pathogenic avian influenza viruses (HPAI) (H5N1) first reported in 2004 in five districts in Kelantan followed by five localized outbreaks in three different states namely Selangor, Perak and Pulau Pinang in 2006 and one localized outbreak in 2007 near Kuala Lumpur. In 2007 Malaysia was declared free from HPAI. A national surveillance programme is practiced which includes sampling of blood and faecal materials from ducks reared under pond system, poultry and exotic birds found in pet shops, parks and sanctuaries of migratory birds for the detection of HPAI antibodies and viruses, respectively. Recently, 2 cases of subtype H9N2 and H5N2 from pet birds and swans, respectively were detected by RT-PCR. Eradication programme with culling and stamping out policy as well as strict bio-security were practiced in the control of the disease.

In October 1998, the country reported the first case of Nipah virus infections in pigs and human which claimed a total of 108 human died in 1999. This new virus is closely related to Hendra virus causing mortality in horses and human in Australia in 1994. Seroprevalence of Nipah virus in flying fox (*Pteropus hypomelanus*) a type of fruit bat and Malayan flying fox (*Pteropus vampyrus*) showed 11% and 33% positive reactions. A Nipah virus National Swine Surveillance programme was set-up and the disease was successfully eradicated. Other zoonotic diseases such as leptospirosis, brucellosis, salmonellosis, melioidosis and tuberculosis were occasionally reemerging in the country.

With the high commitment and strong financial support from the government, research and development (R&D) in zoonosis in the country focus on genomic and bioinformatics with emphasis on the pathogenesis, host-microbe interactions, microbial biology and evolution, diagnostics and vaccine development. Surveillance programme is a common practice. The global nature of the threat posed by the emerging and reemerging zoonotic diseases require international cooperation in identifying, controlling and preventing as well as R&D of these diseases.

## **Chairul A. NIDOM**

Doctor  
Faculty of Veterinary Medicine  
Institute Tropical Disease  
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### **CURRENT EMPLOYMENT :**

1. Vice Dean of Collaboration and Information System Affair
2. Head of Avian Influenza Laboratory Tropical Disease Center Airlangga University
3. Lecturer and Researcher in Biochemistry and Molecular Biology Department of Faculty of Veterinary Medicine, Airlangga University.
4. Member of Scientific Board of Indonesia National Committee for Avian Influenza Control and Pandemic Influenza Preparedness
5. Member of Scientific Board of Campaign Management Unit of Avian Influenza on Agricultural Department, Indonesia
6. Member of National Animal Quarantine, Commission Agriculture Department, Indonesia.

### **EDUCATIONAL BACKGROUND :**

1. Faculty of Veterinary Medicine in Bogor Agriculture University, as DVM in 1982
2. Magister Program in Airlangga University, as MS, 1986.  
Field : Biochemistry & Molecular Biology.
3. Doctor Program in Airlangga University, as Doctor, 2005.  
Field : Molecular Analysis of Subtype H5N1 Avian Influenza Virus Genome in Indonesia (dissertation)

## O-16 Update: H5N1 Avian Influenza Viruses in Indonesia

**Chairul A. Nidom<sup>1,2)</sup>**

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An outbreak of HPAI viruses continues to spread among animals and humans in Indonesia. Thirty provinces (90.9%) in Indonesia have reported animal cases and twelve provinces (36.4%) have reported human cases of H5N1 infection. As of May 2010, Ministry of Health reported that there had been 163 human cases, with 135 deaths (greater than 82.8%).

To understand the enzootic conditions of the viruses in Indonesia, H5N1 viruses from chickens from 2003 – 2009 were phylogenetically characterized. Twenty four H5N1 viruses from 2003 – 2007 and ten viruses from 2008-2009. Although previous studies exclusively classified the Indonesian viruses into clades 2.1.1 - 2.1.3, our phylogenetic analyses revealed a new sublineage that did not belong to any the present clades. H5N1 viruses were introduced from Java Island to Sulawesi, and other Islands on multiple occasions from 2003 – 2009.

Pigs have long been considered a potential intermediate host for the adaptation of avian influenza viruses to humans. To determine whether this potential exists for pigs in Indonesia, we conducted surveillance during 2005–2009. We found that some pigs in four provinces were infected during 2005–2007 but not 2008–2009. Phylogenetic analysis showed that the viruses had been introduced into the pig population in Indonesia on at least three occasions. One isolate had acquired the ability to recognize a human-type receptor. No infected pig had influenza-like symptoms, indicating that influenza (H5N1) viruses can replicate undetected for prolonged periods, facilitating avian virus adaptation to mammalian hosts.

**Keyword** : H5N1 Viruses, Chicken, Pig, Human-type receptor.

## **Bambang SUMIARTO**

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### **ACADEMIC DEGREES:**

DVM.	1978	Gadjah Mada University, Indonesia (Faculty of Veterinary Medicine)
MS	1984	Graduate School, Gadjah Mada University (Veterinary Science)
M.Sc.	1993	Ontario Veterinary Collage, University of Guelph, Canada (Veterinary Epidemiology)
Dr.	2002	Graduate School, Gadjah Mada University (Doctor in Veterinary Science)

### **PROFESSIONAL APPOINTMENTS:**

1979 - 2010	Lecturer, Veterinary Public Health, Faculty of Vet. Med., GMU
2003 - Now	Professor, Faculty of Veterinary Medicine, GMU
2004 – 2008	Vice Dean of Academic Affair, Faculty of Veterinary Medicine, GMU
2008 – Now	Dean, Faculty of Veterinary Medicine, GMU

### **RESEARCH INTERESTS:**

- 2003 – The analysis of *Escherichia coli* O157:H7 contamination factors in smallholder dairy cow water sources in the District of Sleman, Indonesia. *Agrosains*, Vol. XVI No3
- 2004 – Production of monoclonal antibodies toward *Escherichia coli* O157:H7 local isolate to develop and identified VTEC using ELISA. *Journal of Veterinary science*, Vol. XXII, No1.
- 2004. A case control study on Rabies of dog in the district of Agam, West Sumatra, Indonesia, *Agrosains*, Vol. XVII No3.
- 2004 – The rate of *Escherichia coli* O157:H7 contamination in lamb at Yogyakarta slaughterhouse. *Journal of Indonesia Veterinary Medicine*, Vol. V No 3.
- 2004 – Epidemiology of *Verocytotoxigenic Escherichia coli* of dairy cattle in Central Java and Yogyakarta Special Territory: The study of animal Level. *Journal of Veterinary science*, Vol. XXII, No2
- 2005 – Pathogenic organism in meat and principles of assessment, Presented on program TOT course on Food Inspection
- 2005 – Study of Avian Influenza in Central Java, East Java, and Yogyakarta Special Territory.
- 2006 - Economic Analysis Of Avian Influenza Controlling Program in Java, Directorate General of Livestock Services, Indonesia
- 2007 - Overview on Poultry Sector and HPAI Situation for Indonesia Special Emphasis on Java Island ILRI/IFPRI Project
- 2008 – Epidemiology Rabies in South Sulawesi, Indonesia, Animal Quarrantine, Ministry of Agricultural, Indonesia
- 2010 – Cross-sectional Study Brucellosis on Beef Cattle in Kupang District

## **O-17 Prevalence and Risk Factors of Avian Influenza in Jakarta Province, Indonesia**

**Bambang Sumiarto \*, Sri Mulyono \*\*, and Khusdiana AD \*\*, Rismiati\*\*, Naniek Susetyoharti\*\***

\* Faculty of Veterinary Medicine, Universitas Gadjah Mada Yogyakarta

\*\* Department of Agriculture and Marine Jakarta

Surveillance of Avian Influenza (AI) in poultry has been conducted in the province of Jakarta. The aims of the study are to determine the prevalence and risk factors of AI infection, evaluation of AI prevention program, and provide recommendations to develop control and eradication of AI in poultry in Jakarta Province.

Nine hundred and eighty-six blood samples were taken from poultry in the province of Jakarta. Samples were taken at random and proportional to the population of each city. The blood samples were taken then tested by agglutination test (HI), rapid test, and PCR. Laboratory, poultry, and farm data were collected and analyzed descriptively, associated factors, and linear/logistic regression to take its conclusions.

The results showed that the prevalence of AI surveillance in Jakarta Province in 2009 was 6.1 % decrease compared to the year 2008. The prevalence was the East Jakarta of 9.9 %, 6.3 % of South Jakarta, 0 % West Jakarta, 0 % Central Jakarta, and 0 % North Jakarta, respectively. The causes of AI infections in poultry, in order, were Mampang Prapatan sub-district in South Jakarta (+9.34281), Ciracas sub-district, East Jakarta (+9.05513), Setiabudi sub-district, South Jakarta (+8.87281), and Chatter bird (+7.63202). Furthermore, factors related to the prevalence of AI in poultry, in order, were Mampang Prapatan sub-district, South Jakarta (+0.51235), Cirakas sub-district, East Jakarta (+0.50353), Racing pigeon (+0.50118), Setiabudi sub-district (+0.25353), South Jakarta (+0.25353), Turlledove (0.25235), and Chatter birds (+0.25235). The results concluded that the rise and fall of AI cases in some areas in the provinces of Jakarta, which did not follow the pattern, indicate that disease eradication programs in the provinces of Jakarta not gone well. Mampang Prapatan, Cirakas, and Setiabudi sub-district were as a place of infection, while Chatter Birds, Racing Pigeon, Turlledove as a reservoir of AI in poultry of Jakarta.

## **Hiroshi KIDA**

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### **ACADEMIC DEGREES:**

BVM 1967 Hokkaido University (Veterinary Medicine)  
DVM 1967 Ministry of Agriculture and Fisheries  
MVM 1969 Hokkaido University (Veterinary Medicine)  
PhD 1977 Hokkaido University (Veterinary Medicine)

### **PROFESSIONAL APPOINTMENTS:**

1969-76 Research Officer, Takeda Chemical Industries, Ltd  
1976-78 Lecturer, School of Veterinary Medicine, Hokkaido University  
1978-94 Associate Professor, Sch Vet Med, Hokkaido Univ  
1980-81 Visiting Scientist, WHO Collaboration Centre, Memphis, TN  
1986-87 Visiting Professor, WHO Collab Ctr  
1989 Professor, University of Zambia, Lusaka, Zambia  
1994-date Professor, Hokkaido Univ Graduate School Vet Med  
1995-2001 Hokkaido University Senator  
1999-date Expert, WHO Global Influenza Programme  
2001-05 Dean, Graduate School of Veterinary Medicine, Hokkaido Univ  
2004-date Head, OIE World Reference Laboratory for Avian Influenza  
2005-date Director, Research Center for Zoonosis Control, Hokkaido Univ  
2007-date Member of the Japan Academy

**PUBLICATIONS:** 217 original articles and 107 book chapters and reviews

### **RESEARCH INTERESTS:**

Ecology and pathogenesis of influenza viruses, Zoonoses, Vaccinology

### **AWARDS:**

2005 Japan Academy Prize for “Studies for the Control of Influenza —Mechanism of Emergence of Pandemic Influenza Virus Strains in Poultry, Domestic Animals and Humans, and Molecular Basis of the Neutralization of Viral Infectivity with Antibodies—” & c



## **O-18 Looking Back upon the Past Avian, Swine, and Pandemic Influenza** —How are we prepared for avian and pandemic Influenza?—

**Hiroshi Kida, DVM, PhD, MJA**

Professor, Graduate School of Veterinary Medicine,  
Director, Research Center for Zoonosis Control,  
Head, OIE World Reference Laboratory for Animal Influenza,  
Hokkaido University, Sapporo, Japan

Since late 2003, the H5N1 highly pathogenic avian influenza virus (HPAIV) has seriously affected poultry in Asia. Well over 500 million birds have died from infection or been killed for the control purposes. A HPAIV is generated when a nonpathogenic virus brought in by migratory birds from nesting lakes in the north is transmitted to chickens via domestic ducks, geese, quails, turkeys, etc. and acquires pathogenicity for chickens with repeated multiple infections in the chicken population. This pathogenicity does not mean for other species of birds and mammals, nor does it for humans. It was confirmed that more than 501 people have been infected with the H5N1 virus, 60% of whom died in Asia, the Middle East and Africa since 2004 as of 22 July 2010. Against this backdrop, it was assumed that the H5N1 virus would acquire the ability to transmit among humans and wreak havoc as a new pandemic virus.

In 16 months since the swine-origin H1N1 pandemic strain emerged, 18,366 deaths have been confirmed in 214 countries as of 18 July 2010. On the basis of our knowledge on the ecology and evolution of influenza viruses, the following points will be discussed;

1. Why has the H5N1 HPAIV strain persisted in the world for 13 years?
2. Do the H5N1 HPAIV strains perpetuate in the lakes where migratory birds nest?
3. Is it OK to forget about H5N1 HPAIV since the swine-origin H1N1 strain appeared?
4. What is the best measure for the control of avian influenza?
5. Is seasonal influenza well controlled?
6. How should we substantially prepare for pandemic influenza?



# **CV of other participants**

## **Yungchang Lin**

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### **ACADEMIC DEGREES:**

B.A. 1984 National Chung Hsing University  
(Department of Veterinary Medicine)  
M.A. 1987 The University of Tokyo (Veterinary Surgery)  
Ph.D. 1993 The University of Tokyo (Veterinary Surgery)

### **PROFESSIONAL APPOINTMENTS:**

1993 - 2005 Associate Professor, College of Veterinary Medicine  
National Chung Hsing University  
2006 - Professor, College of Veterinary Medicine,  
National Chung Hsing University

### **RESEARCH INTERESTS:**

Boron Neutron Capture Therapy  
Veterinary Imaging  
Disorders

## **Yung-Huey WU**

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### **ACADEMIC DEGREES:**

B.A.	1979	National Pingtung Institute of Agriculture (Veterinary Medicine)
M.A.	1983	Miyazaki University (Veterinary Medicine)
Ph.D.	1994	Azabu University (Veterinary Medicine)

### **PROFESSIONAL APPOINTMENTS:**

1980-1986	Lecturer, National Pingtung Institute of Agriculture
1987-1996	Associate Professor, National Pingtung Polytechnic Institute (NPPI)
1997-	Professor, National Pingtung University of Science and Technology (NPUST)
1992-1999	Director, Veterinary Teaching Hospital, NPPI
1999-2005	Head, Department of Veterinary Medicine, NPUST

### **RESEARCH INTERESTS:**

Veterinary ultrasound, Exotic animal medicine, Ruminant medicine

## **Ming-Huei LIAO**

Professor & Chairman  
Department of Veterinary Medicine  
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### **ACADEMIC DEGREES:**

B.A. 1981 Chung-Hsing University (Veterinary Medicine)  
M.A. 1987 Taiwan University (Veterinary Medicine)

### **PROFESSIONAL APPOINTMENTS:**

1974-1982 Veterinarian, Taiwan Sugar Company (Pig Industry)  
1982-1987 Teaching assistant, Faculty of National Pingtung Institute of Agriculture  
1987-1991 Instructor, Faculty of National Pingtung Polytechnic Institute (NPPI)  
1991-2002 Associate Professor, Faculty of National Pingtung University of Science and Technology (NPUST)  
2002-2008 Professor, Faculty of NPUST  
2008- Professor and Chairman, Faculty of NPUST

### **RESEARCH INTERESTS:**

Microbiology, Epidemiology, Biotechnology, Infectious Diseases of Animals

**Chen-Hsuan LIU**

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**ACADEMIC DEGREES:**

- DVM 1977 National Taiwan University (Veterinary Medicine)
- MS 1985 Iowa State University, Ames, Iowa, USA (Veterinary Pathology)
- PhD 1992 University of California-Davis, Davis, CA, USA (Comparative Pathology)

**PROFESSIONAL APPOINTMENTS:**

- 1979-1983 Research Assistant, Pig Research Institute, Taiwan (PRIT)
- 1996-1999 Research Fellow, Senior diagnostic pathologist, Department of Pathobiology; PRIT
- 1999-2005 Associate Professor, Department of Veterinary Medicine, National Taiwan University
- 2000-2003 Chief, Diagnostic Center of Animal Diseases, National Taiwan University Veterinary Hospital
- 2005- Professor, Department of Veterinary Medicine, National Taiwan University
- 2008- Dean, School of Veterinary Medicine, National Taiwan University
- 2008- President, Chinese Society of Comparative Pathology
- 2010- President, Chinese Society of Veterinary Science

**RESEARCH INTERESTS:**

Comparative pathology, Zoonosis, Tumor pathology, Neuropathology

**Chang CHIH-CHENG**

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**ACADEMIC DEGREES:**

B.A. 1984 National Chiayi College of Agriculture (Veterinary Medicine)  
M.A. 1992 National Taiwan University (Veterinary Medicine)  
Ph.D. 2001 Iowa State University (Veterinary Medicine)

**PROFESSIONAL APPOINTMENTS:**

2001 - 2002 Postdoctoral Researcher, Veterinary Diagnostic Laboratory, Iowa State University  
2002 - 2004 Associate Researcher, Animal Technology Institute Taiwan  
2004 - Assistant Professor, Department of Veterinary Medicine/Director, Veterinary Teaching Hospital, National Chiayi University

**RESEARCH INTERESTS:**

- Teaching on molecular biology, virology, swine diseases
- Direct the project of genetic variation of Taiwan PRRSVs
- Direct the project of serological monitoring of hog cholera in Taiwan pig farms
- Service of disease diagnosis and treatment recommendation for Taiwan pig farms



## **Annop KUNAVONGKRIT**

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### **ACADEMIC DEGREES:**

B.Sc.(Animal Science)	1972	Chulalongkorn University ,Bangkok , Thailand
D.V.M.	1974	Chulalongkorn University ,Bangkok, Thailand
F.R.V.C.S.	1975	Royal Veterinary College , Stockholm, Sweden
Ph.D.	1984	Swedish University of Agricultural Sciences, Uppsala,Sweden

### **PROFESSIONAL APPOINTMENTS:**

1974 - 1978	Lecturer, Department of Animal Husbandry, Faculty of Veterinary Science, Chulalongkorn University
1978 - 1985	Assistant Professor, Department of Obstetrics Gynaecology and Reproduction , Faculty of Veterinary Science, Chulalongkorn University
1985 - 1994	Associate Professor, Department of Obstetrics Gynaecology and Reproduction Faculty of Veterinary Science, Chulalongkorn University
1994- Present	Professor Department of Obstetrics Gynaecology and Reproduction, Faculty of Veterinary Science, Chulalongkorn University
2005 - 2009	Dean, Faculty of Veterinary Science, Chulalongkorn University
2010- Present	Director, The Office of the Commission on Agricultural Resource Education, Chulalongkorn University

### **RESEARCH INTERESTS:**

Swine Reproductive Management  
Andrology in Male Animal  
Endocrinology in Animal Reproduction

**Phitsanu TULAYAKUL**

Lecturer  
Department of Veterinary Public Health and Diagnostic Services  
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**ACADEMIC DEGREES:**

DVM.	1999	Veterinary Medicine, Kasetsart University
M.Sc.	2002	Tropical Medicine, Mahidol University
Ph.D.	2006	University of Tokyo (Veterinary Medical Sciences)

**PROFESSIONAL APPOINTMENTS:**

2002 - 2010	Lecturer, Department of Veterinary Public Health and Diagnostic Services, Faculty of Veterinary Medicine, Kasetsart University
2008-2009	Assistant to the Dean for International Affairs
2009-2010	Assistant to the Dean for Academic and International Affairs

**RESEARCH INTERESTS:**

Environmental toxicology mainly bacterial toxins, for example: pathogenic bacteria (*Salmonella spp.*, *E. coli*) contamination in the farms. Moreover, I also pay much concentrate in heavy metal, trace minerals, mycotoxin contamination in animal feed and heavy metal in public ground-water and in environment.

## **Jatuporn KAJAYSRI**

Associate Professor  
Faculty of Veterinary Medicine  
Mahanakorn University of Technology  
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### **ACADEMIC DEGREES:**

D.V.M.	1994	Kasetsart University, Bangkok Thailand (Doctor of Veterinary Medicine)
Dr.med.vet.	1999	University of Veterinary Medicine Hannover, Foundation, Germany (Obstetric and Gynecology of Cattle)

### **PROFESSIONAL APPOINTMENTS:**

1994 - Present	Lecturer, Faculty of Veterinary Medicine, Mahanakorn University of Technology, Bangkok, Thailand
2002 - 2008	Assistant Professor, Faculty of Veterinary Medicine, Mahanakorn University of Technology, Bangkok, Thailand
2008 - Present	Associate Professor, Faculty of Veterinary Medicine, Mahanakorn University of Technology, Bangkok, Thailand

### **RESEARCH INTERESTS:**

Obstetric and Gynecology Andrology and Artificial Insemination of domestic animals

## **Bayarmaa BOLD**

Coordinator  
International Affairs  
Mongolian State University of Agriculture  
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### **ACADEMIC DEGREES:**

B.A.	1998	National University of Mongolia (Biotechnology)
M.A.	2002	Mongolian State University of Agriculture (Veterinary Parasitology)
Ph.D.	2009	Inje University, South Korea (Nanobio engineering)

### **PROFESSIONAL APPOINTMENTS:**

1998-2006	Researcher, Parasitology Laboratory, Institute of Veterinary Medicine
2009 -up to today	Coordinator, International Affairs, Mongolian State University of Agriculture

### **RESEARCH INTERESTS:**

Photodynamic therapy as an approach for the disinfection of bacteria

## **Ganbold YANDAG**

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### **ACADEMIC DEGREES:**

B.A.	1985	Ukrainian Agriculture Academia, Soviet Union (Former name) (Veterinary medicine)
M.A.	1985	Ukrainian Agriculture Academia, Soviet Union (Former name) (Veterinary medicine)
Ph.D.	1993	Mongolian State University of Agriculture (Veterinary pharmacology and toxicology)
	2001	Assistant professor
	2006	Professor
ScD	2009	MSUA

### **PROFESSIONAL APPOINTMENTS:**

1985 - 1988	Veterinarian, State Central Veterinary Laboratory
1988 - 1998	Researcher and Head, Laboratory of Pharmacology and Toxicology, Scientific secretary, Institute of Veterinary Medicine, Mongolian State University of Agriculture
1998 - 2008	State Laboratory for Testing and Certification of Veterinary drugs
2008 -	Director, Institute of veterinary medicine, MSUA

### **RESEARCH INTERESTS:**

Veterinary pharmacology and toxicology, preparation against allergies and asthma named "Akritrakt".





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Hokkaido University**