

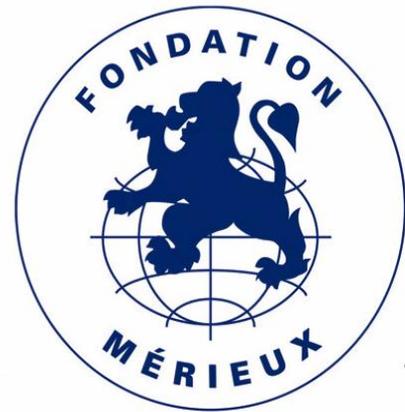
Animal Models and Relevance/Predictivity: how to better leverage the knowledge of the veterinarianian field

"Les Pensières"
Fondation Mérieux Conference Center
Veyrier du Lac – France
October 10-12, 2011

Steering Committee :

Dominique Buzoni-Gatel
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Patrick Hardy
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Background

The year 2011 is the 250th anniversary of the first veterinary school in Lyon. Claude Bourgelat was its first director and the inventor of the concept of comparative biopathology as written down in the Declaration of the Veterinary School of Lyon, 1761. *Ars Veterinaria*, historically focused on livestock and more empiric, was opposed to the science of human medicine. Nowadays, however, the development of the concept "one world, one health" reconciled both *Ars* and Science.

Biomedical research, as an experimental science, has been relying on animal models. Some people claim that these animal-based models are not relevant and not ethical. However, by working on comparative anatomy and physiology, major progress in medicine has occurred. Infectious agents, which ignore species boundaries, can be equally studied in animals and in humans. The deciphering of the human genome and those of several animal and vegetal species provide a tremendous development of biological science. But as any models, predictivity does not mean direct transposition of results. Nonetheless, similarities between species are relevant enough to permit translational research, from the cells and tissues to animals, then to humans. Despite the efforts and the successes to reduce the use of animals in research, it is not possible to avoid completely using animals to improve human health. Whole organisms are still necessary to explore physiology and pathology, to evaluate the interactions between organs and functions, and to assess the efficacy and safety of novel drugs and vaccines. The combination of several models is done to increase the predictivity of models and the confidence in the scientific outcomes. In this context, basic and applied biomedical research benefits to both humans and animals.

Considering the global sanitary situation, emergence of new infectious diseases is accelerating. The last sanitary crises came from animals: AIDS in the 80s, BSE in the 90s, and SRAS in the 2000s. Pandemic flu is still a constant concern for worldwide health organizations.

One of these challenges is the spread of infectious diseases that emerge (or re-emerge) from the interfaces between animals and humans and the ecosystems in which they live. The OIE, WHO and FAO have prepared a consensus document on global measures needed to coordinate medical and veterinary health policies more effectively, taking into account new requirements to prevent and control zoonoses: "A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal–Human–Ecosystems Interface", 14 October 2008.

At the animal–human health interface, ecosystems contribute to the development of outbreaks and the dissemination of infectious agents. Development of arboviroses is one of the consequences where both animals and human beings are concomitantly affected.

The objective of the workshop is to review the importance of the animals in the basic and applied research, the interactions between veterinary medicine and human medicine, the susceptibility to common infectious diseases as illustrated by the concept of "one world, one health".

The first day will be dedicated to animal models and their relevance and to get an overview of translational research. The second day will focus on common infections to animals and human beings and the leverage and complementarities between veterinary and human medicine.

MONDAY, 10th October, 2011

WELCOMING SESSION		
17h30-18h30	► <i>Registration</i>	
18h30-18h40	<i>Welcome Addresses</i>	Fondation Mérieux
18h40-19h20	<i>Infectious Disease Research in Livestock: Models, Targets and Beyond</i>	Christian Menge
19h30	► <i>Welcome Dinner</i>	

TUESDAY, 11th October 2011

SESSION I	Societal issues Chair: Th. Decelle	
8h30-8h50	<i>The “One Health One World” concept and strategy</i>	Thierry Pineau
8h50-9h05	<i>Discussion</i>	
09h05-09h25	<i>Responsibility in the use of animals in biomedical research</i>	Katheryn Chapman
09h25-09h40	<i>Discussion</i>	
SESSION II	Recent technological advances in the study of animal models of human diseases Chair: Xavier Montagutelli	
09h40-10h00	<i>The mouse clinics, improving phenotyping</i>	Yann Héroult
10h00-10h15	<i>Discussion</i>	
10h15-10h45	► <i>Coffee Break</i>	
10h45-11h05	<i>Humanized mouse models to study human diseases</i>	Jim di Santo
11h05-11h20	<i>Discussion</i>	
11h20-11h35	<i>Advances in in vivo small animal imaging</i>	Alain Lepape
11h35-11h50	<i>Discussion</i>	
SESSION III	Animal Models for translational biomedical research Chair: P. Hardy	
11h50-12h10	<i>Pigs models of cystic fibrosis</i>	David K. Meyerholz
12h10-12h25	<i>Discussion</i>	
12h30-14h00	<i>Lunch</i>	
14h00-14h20	<i>The use of animal models in the development of vaccines</i>	Volker Gerdts
14h20-14h35	<i>Discussion</i>	

14h25-14h45	<i>Animal models for Parkinson disease: Brain repair</i>	Philippe Naveilhan
14h45-15h00	<i>Discussion</i>	
15h00-15h30	<i>Coffee break</i>	
15h30-15h50	<i>Use and limit of nonhuman primate models of human infectious diseases</i>	Roger Legrand
15h50-16h05	<i>Discussion</i>	
Session IV	Physiopathology of spontaneous animal diseases Chair: Alain Lepape and Thierry Pineau	
16h05-16h25	<i>Animal models for type I diabetes</i>	Malin Flodstrom-Tullberg
16h25-16h40	<i>Discussion</i>	
16h40-17h00	<i>Animal models of inherited retinal degeneration to test novel therapeutic approaches</i>	Jacques Mallet
17h00-17h15	<i>Discussion</i>	
17h15-17h35	<i>Animal models in influenza vaccines testing</i>	Carla Herberts
17h35-17h50	<i>Discussion</i>	
19h15	<i>Dinner</i>	
Wednesday	12th October	
8h30-8h50	<i>Animal models for multiple sclerosis</i>	Randolph Noelle
8h50-9h05	<i>Discussion</i>	
9h05-9h25	<i>The use of genetic reference population in metabolic diseases</i>	Philippe Cettour-Rose
9h25-9h40	<i>Discussion</i>	
9h40-10h00	<i>Transgenic pigs as models for translational biomedical research</i>	Eckhard Wolf
10h00-10h15	<i>Discussion</i>	
10h15-10h45	<i>Coffee Break</i>	
SESSION V	Animal models of infectious diseases Chair: D. Buzoni and P-A. Cazenave	
10h45-11h05	<i>The influence of host-microflora interactions in pathological processes</i>	Nadine Cerf-Bensussan
11h05-11h20	<i>Discussion</i>	
10h45-11h05		
11h05-11h20	<i>Discussion</i>	
11h20-11h40	<i>The cotton rat model of respiratory viral infections</i>	JC Blanco

11h40-11h55	Discussion	
11h55-12h15	<i>Using wild mice to tackle genetic control of resistance to infectious diseases (West-Nile, Rift Valley Fever, Plague)</i>	Xavier Montagutelli
12h15-12h30	Discussion	
12h30-14h00	Lunch	
14h00-14h20	<i>Animal models for Borreliosis</i>	Reinhard Strubinger
14h20-14h35	Discussion	
14h35-14h55	<i>An aerosol model of tuberculosis in rats for testing new drugs</i>	Radha K. Shandil
14h55-15h10	Discussion	
15h10-15h30	<i>Primates models of SIV infection: different susceptibility of green monkeys and rhesus macaques to develop AIDS after SIV infection</i>	Michaela Müller-Trutwin
15h30-15h45	Discussion	
15h45-16h05	Coffee break	
16h05-16h25	<i>Animal models for understanding immunity to Malaria</i>	Jane Langhorne
16h25-16h40	Discussion	
16h40-17h00	<i>Animal models for the analysis of immune responses to Leishmaniases, relevance to human diseases</i>	David Sacks
17h00-17h15	Discussion	
17h15-17h30	<i>Concluding remark and end of the meeting</i>	

DRB