

Teaching department: Epidemiology and Public Health

Pasteur/CNAM School of Public Health



Vaccinology

course

2010-2011

PROGRAM OF THE VACCINOLOGY COURSE

(March 1 - April 1, 2011)

Directors of the course

Armelle PHALIPON
Molecular Microbial Pathogenesis Unit,
INSERM U786,
Institut Pasteur

Frédéric TANGY
Viral Genomics and Vaccination Laboratory
CNRS URA-3015
Institut Pasteur

Head of the Teaching department Epidemiology and Public Health

Arnaud FONTANET
Emerging Disease Epidemiology Unit
Institut Pasteur



The Institut Pasteur and the organizers warmly thank Sanofi Pasteur for its generous contribution to the Vaccinology course by sponsoring both organization and fellowships..

We are also grateful to the following sponsors for fellowships:



E-learning and workshops are made in collaboration with HSeT Foundation.

Module I : Vaccinology, an integrative discipline

Tuesday, March 1

2:00 pm - 3:30 pm	Introduction to the course	A. PHALIPON, F. TANGY and S. MALOT
3:30 pm - 6:00 pm	Short presentations of students and teachers	

Wednesday, March 2

9:00 am -10:30 am	The greatest vaccine success : the smallpox eradication story	D. TARANTOLA (France/Australia)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 12:30 pm	The pasteurian contribution in the history of vaccines	M. SCHWARTZ (Institut Pasteur, France)
12:00 pm - 2:00 pm:	<i>Lunch</i>	
2:00 pm - 3:30 pm	What are the issues vaccine manufacturers take into account for go/nogo in developing a new vaccine	R. RAPPUOLI (Novartis, Italy)
3:30 pm - 4:00 pm	<i>Coffee break</i>	
4.00 pm - 5.30 pm	Workshop presentation	A. PHALIPON and F. TANGY

Thursday, March 3

9:00 am -10:30 am	Epidemiology of infectious diseases: prerequisite for decision-making in vaccine development	E. MILLER (Health Protection Agency, UK)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 12:00 pm	Theoretical biology and mathematical modelling in disease epidemiology	P. WHITE (Health Protection Agency, UK)
12:00 pm - 2:00 pm:	<i>Lunch</i>	
2:00 pm - 3:00 pm	Public health and economics: quantitative parameters for decision-making in vaccine development	J. EDMUNDS (LSHTM, UK)

Friday, March 4

9:00 am - 10:30 am	Presentation of the Sanofi Pasteur Modelling program	A. THOMSON & L. COUDEVILLE (Sanofi Pasteur, France)
10:30 am - 12:30 pm	Students' work	
2:00 pm - 5:30 pm	Workshop Modelling	A. THOMSON

Module II : Immunological aspects of vaccination

Monday , March 7

9:00 am - 10:30 am	Human genetics, evolution, and innate immunity	L. QUINTANA-MURCI (Institut Pasteur, France)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 1:00 pm	Immunological memory: the challenge of conferring long-term protection?	A. LANZAVECCHIA (Institute for Research in Biomedicine, Switzerland)
1:00 pm - 2:30 pm	<i>Lunch</i>	
2:30 pm - 4:00 pm	What a vaccinologist should know about the basic aspects of immune responses	C. LECLERC (Institut Pasteur, France)
4:00 pm - 4:30 pm	<i>Coffee break</i>	
4:30 pm - 5:30 pm	<i>Sharing experiences: what is still missing in our current knowledge of protective immunity to improve vaccine effectiveness?</i> (C. Leclerc, A. Lanzavecchia, L. Quintana-Murci, A. Phalipon & F. Tangy)	

Tuesday, March 8

9:00 am - 10:30 am	Hurdles to vaccination in early life: revisiting immunological immaturity in human newborns	A. MARCHANT (Univ. Libre de Bruxelles, Belgium)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 12:30 pm	Vaccination in pregnant women	F. MUNOZ (Baylor College of Medicine, USA)
12:30 pm - 2:00 pm	<i>Lunch</i>	
2:00 pm - 3:30 pm	Vaccination and immunosenescence	R. ASPINALL (Imperial College, UK)
3:30 pm - 4:00 pm	<i>Coffee break</i>	
4:00 pm - 5:30 pm	<i>Sharing experiences: towards the development of specific vaccines according to the age of the vaccinees?</i> (A. Marchant, F. Munoz, R. Aspinall, A. Phalipon & F. Tangy)	

Wednesday, March 9

9:00 am - 10:00 am	Immunological basis for responses to mucosal vaccines (I)	J.-P. KRAEHENBUHL (HSeT Foundation, Switzerland)
10:00 am - 10:15 am	<i>Coffee break</i>	
10:15 am - 11:15 am	Immunological basis for responses to mucosal vaccines (II)	J.-P. KRAEHENBUHL (HSeT Foundation, Switzerland)

11.30 am - 1:00 pm	Novel strategies for delivering a vaccine (including DNA, vectors, prime-boost, nasal, transcutaneous, edible vaccines...)	M. FRIEDE (WHO, Switzerland)
1:00 pm - 2:00 pm	<i>Lunch</i>	
2:00pm - 3.30pm	Adjuvants: past and future directions (including the recent fundamental data on innate immunity)	G. DEL GIUDICE (Novartis, Italy)
3:30 pm - 4:00 pm	<i>Coffee break</i>	
4:00 pm - 5:30 pm	<i>Sharing experiences: What is the future of novel routes of administration?</i> (J.-P. Kraehenbuhl, M. Friede, G. Del Giudice, A. Phalipon & F. Tangy)	

Module III : Novel strategies for characterizing protective antigens and vaccine design

Thursday, March 10

9:00 am - 10:30 am	From genomics to proteomics	G. GRANDI (Novartis, Italy)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 12.30 pm	Vaccine vectors: immunologic basis	M. A. LIU (Karolinska Institutet, Sweden) (Pro TherImmune, USA)
12:30 am – 2.00 pm	<i>Lunch</i>	
2.00 pm - 3:30 pm	Innate immunity and systems biology: the future of vaccinology?	B. PULENDRAN (Emory Vaccine Center, USA)
3:00 pm - 3.30 pm	<i>Coffee break</i>	
3.30 pm - 4.30 pm	<i>Sharing experiences: Advantages and disadvantages of the different approaches</i> (G. Grandi, B. Pulendran, M. Liu, A. Phalipon & F. Tangy)	
4:30 pm - 5:30 pm	Preparation Workshop	A. PHALIPON and F. TANGY

Module IV : Preclinical and clinical steps, basic principles

Friday , March 11

9:00 am - 10:30 am	Preclinical data: animal models, immunogenicity	B. MARTINA (Erasmus MC, The Netherlands)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 12.30 pm	GMP production: which prerequisites and how to proceed	M. MEHTALI (Vivalis, France)
12:30 am - 2:00 pm	<i>Lunch</i>	
2:00 pm - 3:30 pm	Preclinical data: toxicology	Ph. ANCIAN (Transgene, France)
3:30 pm - 4:00 pm	<i>Coffee break</i>	
4:00 pm - 6:00 pm	Preparation Workshop	A. PHALIPON and F. TANGY

Monday, March 14

9:00 am - 10.30 am	Measurement of immune responses during vaccine trials	M.-L. GOUGEON (Institut Pasteur, France)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am-12:30 pm	Phase I/II vaccine trials: methodology and implementation	D. LEWIS (SGUL, London)
12:30 pm - 2:00 pm	<i>Lunch</i>	
2:00 pm - 3:30 pm	Phase III vaccine trials: methodology and implementation	N. BEGG (GSK Biologicals, Belgium)
3:30 pm - 4:00 pm	<i>Coffee break</i>	
4:00pm - 5:30 pm	Post license Clinical Trials and pharmacovigilance through a practical example	D. DELATTRE (Sanofi Pasteur MSD, France)

Tuesday, March 15

9:00 am - 10:30 am	Ethical issues in human vaccine trials	M. WATSON (Sanofi Pasteur, France)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 12:30 pm	Regulatory issues in human vaccine trials	C. DELVAL (Institut Pasteur, Paris)
12:30 pm - 2:00 pm	<i>Lunch</i>	
2:00 pm - 5:00 pm	Students' work	

Module V : Major infectious diseases, epidemiology, physiopathology and vaccine development

Wednesday, March 16

A. Major poverty-associated infectious diseases

9:00 am - 12:30 pm	Workshop / Design of new vaccine strategies against tuberculosis	N. WINTER (INRA, France) S. STENGER (IMMH, Germany) H. DOCKRELL (LSHTM, UK) A. PHALIPON and F. TANGY
12:30 pm - 2:00 pm	<i>Lunch</i>	
2:00 pm - 5:00 pm	Workshop / Design of new vaccine strategies against tuberculosis	N. WINTER, S. STENGER, H. DOCKRELL, A. PHALIPON and F. TANGY

Thursday, March 17

9:00 am - 10:30 am	Tuberculosis: epidemiology and physiopathology of infection	N. WINTER (INRA, France)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 12:30 pm	Immune responses to tuberculosis and vaccine approaches	S. STENGER (IMMH, Germany)
12:30 pm - 2:00 pm	<i>Lunch</i>	
2:00 pm - 3:30 pm	BCG vaccination in European and African populations: implications for the design of new tuberculosis vaccines	H. DOCKRELL (LSHTM, UK)
3:30 pm - 4:00 pm	<i>Coffee break</i>	
4:00 pm - 5:30 pm	<i>Sharing experiences: Will it be possible to do better than BCG against pathogen so well adapted to its host?</i> (N. Winter, S. Stenger, H. Dockrell, A. Phalipon & F. Tangy)	

Friday, March 18

9:00 am - 10:30 am	HIV-AIDS: epidemiology and molecular virology	S. WAIN-HOBSON (Institut Pasteur, France)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 12:30 pm	AIDS pathophysiology	G. SILVESTRI (University of Pennsylvania, USA)
12:30 pm - 2:00 pm	<i>Lunch</i>	
2:00 pm - 3:30 pm	Towards an AIDS vaccine	B. AUTRAN (Hôpital Pitié-Salpêtrière, France)

3:30 pm - 4:00 pm *Coffee break*

4:00 pm - 5:30 pm **Sharing experiences: Can we expect an efficient HIV vaccine?**
(S. Wain-Hobson, G. Silvestri, B. Autran, D. Scott Algara, A. Phalipon & F. Tangy)

Monday, March 21

9:00 am - 10:30 am **Malaria: epidemiology and physiopathology of infection** O. PUIJALON
(Institut Pasteur, France)

10:30 am - 11:00 am *Coffee break*

11:00 am - 12:30 pm **Malaria: progress and obstacles in the development of a malaria vaccine** J. VEKEMANS
(GSK Biologicals, Belgium)

12:30 pm - 2:00 pm *Lunch*

2:00 pm - 4:00 pm **Neglected diseases - Anthelmintic vaccines: dream or reality?** S. GRAHEK
(Sabin Vaccine Institute, USA)

4:00 pm - 4:30 pm *Coffee break*

4:30 pm - 6:00 pm **Sharing experiences: the particular features of parasites to modulate host immune responses**
(O. Puijalon, J. Vekemans, P. Hotez, A. Phalipon & F. Tangy)

Tuesday, March 22

B. Diarrhoeal diseases

9:00 am - 10:30 am **Enteric immunity and vaccine efficacy: questions and challenges** Ph. SANSONETTI
(Institut Pasteur, France)

10:30 am - 11:00 am *Coffe break*

11:00 am - 12:30 pm **An update of vaccine development against bacterial enteric pathogens** Ph. SANSONETTI

2:00 pm - 3:30 pm **Rotavirus: physiopathology and vaccine development** T. VESIKARI
(Univ. of Tampere, Finland)

4:00 pm - 5:30 pm **Sharing experiences: Why are we still waiting for anti-diarrheal vaccines?**
(Ph. Sansonetti, T. Vesikari, A. Phalipon & F. Tangy)

Wednesday, March 23

C. Pneumococcal / Meningococcal infections

9:00 am - 10:30 am **Pneumococcus / Haemophilus influenza b (Hib)** P. HEATH
(St George's Hospital, UK)

10:30 am - 11:00 am *Coffee break*

11:00 am - 12:30 pm **Meningococcal infections and vaccine development** R. MOXON
(John Radcliffe Hospital, UK)

12:30 pm - 1:30 pm **Sharing experiences: what is next?**
(P. Heath, R. Moxon, A. Phalipon & F. Tangy)

1:30 pm - 2:30 pm *Lunch*

3:00 pm - 4:30 pm **Structure-based immunogen development**

F. REY
(Institut Pasteur, France)

Thursday, March 24

D. Virus-induced cancers

9:00 am - 10:30 am **Hepatitis vaccines: past, present and future**

M.-L. MICHEL
(Institut Pasteur, France)

10:30 am - 11:00 am *Coffee break*

11:00 am - 12:30 pm **HPV**

L. de MOERLOOZE
(GSK Biologicals, Belgium)

12:30 pm - 2:00 pm *Lunch*

2:00 pm - 3:30 pm **Cancer vaccines : challenging issues**

C. LECLERC
(Institut Pasteur, France)

3:30 pm - 4:00 pm *Coffee break*

4:00 pm - 5:30 pm **Sharing experiences: the future of preventive versus therapeutic vaccines.**

(M. L. Michel, L. de Moerlooze, C. Leclerc, A. Phalipon & F. Tangy)

Friday, March 25

E. Vector-borne viral diseases

9:00 am - 10:30 am **Vector borne viral diseases**

V. DEUBEL
(Institut Pasteur du Cambodge)

11:00 am - 12:30 pm **Epidemiology of Yellow fever and global 17D vaccination**

M. NIEDRIG
(Robert Koch Institute, Germany)

12:30 pm - 2:00 pm *Lunch*

2:00 pm - 3:30 pm **Dengue vaccine development**

B. GUY
(Sanofi Pasteur, France)

3:30 pm - 4:00 pm *Coffee break*

4:00 pm - 5:30 pm **Sharing experiences: Other strategies to eradicate vector-borne diseases?**

(V. Deubel, , M. Niedrig, B. Guy, A. Phalipon & F. Tangy)

Monday, March 28

F. Acute respiratory infections

9:00 am - 10:30 am	Influenza viruses	E. FODOR (University of Oxford, UK)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 12:30 pm	Influenza vaccines: the challenge to make a new vaccine each year, vaccines for pandemic flu, towards a universal vaccine	O. ENGELHARDT (NIBSC-HPA, UK)
12:30 pm - 2:00 pm	<i>Lunch</i>	
2:00 pm - 3:30 pm	Challenges for development of vaccines against respiratory diseases: the example of RSV	R. KARRON (Johns Hopkins University, USA)
3:30 pm - 4:00 pm	<i>Coffee break</i>	
4:00 pm - 5:30 pm	<i>Sharing experiences: the development of vaccines against pathogens evolving antigen drifting</i> (O. Engelhardt, R. Karron, A. Phalipon & F. Tangy)	

Module VI : Impact of vaccines on control of infectious diseases: success and drawbacks, and future challenges

Tuesday, March 29

A/ Success and drawbacks

9:00 am - 10:00 am	A brief history of vaccination - Achievements and challenges	S. PLOTKIN (Sanofi Pasteur, USA)
10:00 am - 10:30 am	<i>Coffee break</i>	
10:30 am - 12:00 pm	Impact on epidemiology: the example of <i>B. pertussis</i>	N. GUISO (Institut Pasteur, France)
12:00 pm - 1:30 pm	<i>Lunch</i>	
1:30 pm - 3:00 pm	Eradication of poliomyelitis: a “successful” example	F. DELPEYROUX (Institut Pasteur, France)
3:00 pm - 3:30 pm	<i>Coffee break</i>	
3:30 pm - 5:00 pm	Vaccine interference	E. VIDOR (Sanofi Pasteur, France)

Wednesday, March 30

B/ Future challenges

9:00 am - 10:30 am	Globalization of vaccine production	J. CALMET (Sanofi Pasteur, France)
10:30 am - 11:00 am	<i>Coffee break</i>	
11:00 am - 12:30 pm	GAVI: achievements and challenges	M. ZAFFRAN (WHO, Switzerland)
12:30 pm - 2:00 pm	<i>Lunch</i>	
2:00 pm - 3:30 pm	Introducing new vaccines into low-income countries: obstacles, opportunities and complexities: the case of the typhoid fever	L. JODAR (Wyeth, USA)
3:30 pm - 4:00 pm	<i>Coffee break</i>	
4:00 pm - 5:30 pm	Licensing new vaccines based on immunological correlates of protection: the case of pneumococcus	L. JODAR (Wyeth, USA)

Thursday, March 31

9:00 am - 10:30 am **Public perception of vaccination**

D. SALISBURY
(Dept. Health Wellington House, UK)

10:30 am - 11:00 am *Coffee break*

11 :00 am - 12 :30 pm **Closing lecture: the future of vaccinology**

M.T. AGUADO
(WHO, Switzerland)

12:30 pm - 2:00 pm *Lunch*

2:00 pm - 3:00 pm **Exam**

3:30 pm - 4:30 pm **Visit of the Institut Pasteur museum**

Friday, April 1

10:00 am - 12:00 am **Visit of laboratories**

12:00 am - 2:30 pm *Lunch/Closing Party/ Diploma*
