

Summer School on Influenza 2012, Siena July 16-20, 2012

After a successful first edition in 2011, a second Summer School on Influenza was held in Siena (Italy) from 16 to 20 July 2012. The Summer School was organised and supported by the University of Siena and ISIRV, co-chaired by Emanuele Montomoli, Jackie Katz and John Wood.

It was designed for those who were newly started on their influenza careers, be it in basic or applied research, government or private sector activities and it was attended by 35 students from Australia, Europe, Egypt, Senegal, India, Philippines, South America and the USA. The students were provided with an excellent introduction to many aspects of influenza ranging from theoretical concepts to basic techniques used in research and surveillance. The scientific programme was organised into seven different themes: history, epidemiology and ecology of influenza; prevention and control; influenza virology and pathogenesis; immunity to influenza; influenza vaccines; antivirals and other therapies; regulatory practices and challenges. Two special seminars were focused on vaccination (Rino Rappuoli) and on the 2009 Pandemic (Angus Nicoll).

The Summer School on Influenza also gave us an opportunity to recall the figure of Lars Haaheim, co-chair of the first edition who untimely died on June 28, 2011, two months before the beginning of the school. Tributes to Lars' scientific achievements and personal qualities were paid during the course, and thanks to the financial support of the ISIRV Antiviral Group (www.isirv.org/avg), and the Wellcome Trust (www.wellcome.ac.uk/) seven scholarships were created in his honour (The Lars Haaheim Scholarships), in order to support students from developing countries.



Session / Theme	Title	Speaker & Affiliation
Day 1 Monday 16 July		
Welcome & Introduction		Emanuele Montomoli (University of Siena), John Wood (NIBSC, UK), Jackie Katz (CDC, USA)
Theme 1: History, Epidemiology & Ecology	Medical and social impact of pandemics from 1918-2009	John Oxford (Retroscreen)
	Global influenza epidemiology and surveillance	Lyn Finelli (CDC, USA)
Special Seminar	Vaccination: past, present and future	Rino Rappuoli (Novartis)
Special Topic	Lessons learned from the Pandemic 2009 – the ECDC Perspective	Angus Nicoll (ECDC)
Theme 1 History, Epidemiology & Ecology (continued)	Animal influenza	Giovanni Cattoli (IZS Venezie, Italy)
	Student Presentations	Arguelles, Borborema, Broberg, Meseko, Etschmeier, Fragaszy
Day 2 Tuesday 17 July		
Theme 2: Prevention and	Virological diagnosis and surveillance	Olav Hungnes (Norwegian Institute of Public Health, Norway)

Control	Influenza disease burden and vaccination policies	Jon Van Tam (University of Nottingham, UK)
	Effectiveness of vaccines and antivirals	John Treanor (University of Rochester Medical Center, USA)
Theme 3: Virology and Pathogenesis	Virus structure and replication	Sylvie Van der Werf (Institut Pasteur, Paris, France)
	Pathogenesis and host range	Hans Dieter Klenk (University of Marburg, Germany):
	Transmissibility and the influence of the host	Wendy Barclay (Imperial College, London, UK)
Day 3 Wednesday 18 July		
Theme 4: Immunity to Influenza	Human influenza management	Karl Nicholson (UK)
	The immune response to influenza infection	Jackie Katz (Centers for Disease Control and Prevention, Atlanta, USA)
	Immune correlates of protection against influenza	Rebecca J Cox (University of Bergen, Norway)
Theme 5: Influenza vaccines	Inactivated vaccines	Otfried Kistner (Baxter Innovation GmbH)
	Live attenuated vaccines	John Treanor (University of Rochester Medical Center, USA)
	Plant-based influenza vaccines	Nathalie Landry (Médicago Inc., Québec, Canada)
Day 4 Thursday 19 July		
Theme 6: Antivirals & Therapies	Redox-regulated intracellular pathways as new potential targets for anti-influenza drugs	Anna Teresa Palamara (Sapienza University of Rome, Italy)
	Treating the host response in severe disease	David S. Fedson (Sergy Haut, France)
	Influenza antivirals	Alan Hay (National Institute for Medical Research, London, UK)
Theme 7: Regulatory Practices and challenges	Regulatory challenges for influenza vaccines	Leonoor Wijnans ((Medicines Evaluation Board, The Netherlands):
Student Presentations		Kumar, Kurz, Moorthy, Newitt, Perini, Sacramento, Tabinov, Vaccari
Day 5 Friday 20 July		
Theme 7: regulatory practices and challenges (continued)	Licensing & standardisation	John Wood (National Institute for Biological Standards and Control, Hertfordshire, UK – retired)
theme 5: influenza	New vaccine technologies	Alan Shaw (VaxInnate Corporation,

vaccines (continued)		Cranbury, USA)
	Closing Remarks	

MONDAY 16 JULY 2012 08.30 - 09.00. Introduction • Emanuele Montomoli (University of Siena, Italy) and John Wood (National Institute for Biological Standards and Control, Hertfordshire, UK - retired): Welcome in Siena and introduction • Jackie Katz (Centers for Disease Control and Prevention, Atlanta, USA): isirv Introduction 09.00 - 11.30. THEME 1: HISTORY, EPIDEMIOLOGY AND ECOLOGY OF INFLUENZA • John Oxford (Retroscreen Virology Ltd): Medical and social impact of pandemics from 1918-2009 • Lyn Finelli (Centers for Disease Control and Prevention, Atlanta, USA): Global influenza epidemiology and surveillance 11.30 - 13.00. SPECIAL SEMINAR • Rino Rappuoli (Novartis Vaccines and Diagnostics, Siena, Italy): Vaccination: past, present and future 14.30 - 15.30. SPECIAL TOPIC • Angus Nicoll (European Centre for Disease Prevention and Control, Stockholm, Sweden): Lessons learned from the Pandemic 2009 – the ECDC Perspective 15.30 - 17.30. THEME 1: HISTORY, EPIDEMIOLOGY AND ECOLOGY OF INFLUENZA (continued) • Giovanni Cattoli (Istituto Zooprofilattico Sperimentale delle Venezie, Padova, Italy): Animal influenza 17.30 - 19.00. Students' presentations: Vina Arguelles (Department of Health, The Philippines); Samanta Etel Treiger Borborema (Adolfo Lutz Institute, Sao Paulo, Brazil); Eeva Broberg (European Centre for Disease Prevention and Control, Stockholm, Sweden); Clément Meseko (University of Ibadan, Nigeria); Martine Etschmeier (Baxter International Inc.); Ellen Fragaszy (University College, London, UK) TUESDAY 17 JULY 2012 09.00 - 13.00: THEME 2: PREVENTION AND CONTROL • Olav Hungnes (Norwegian Institute of Public Health, Oslo, Norway): Virological diagnosis and surveillance • Jonathan Van Tam (University of Nottingham, UK): Influenza disease burden and vaccination policies • John Treanor (University of Rochester Medical Center, USA): Effectiveness of vaccines and antivirals 14.30 - 18.30. THEME 3: INFLUENZA VIROLOGY AND PATHOGENESIS • Sylvie Van der Werf (Institut Pasteur, Paris, France): Virus structure and replication • Hans Dieter Klenk (University of Marburg, Germany): Pathogenesis and host range • Wendy Barclay (Imperial College, London, UK): Transmissibility and the influence of the host WEDNESDAY 18 JULY 2012 09.00 - 10.30. THEME 3: INFLUENZA VIROLOGY AND PATHOGENESIS (continued) • Karl G. Nicholson (University of Leicester, UK): Influenza disease and management in humans 10.30 - 13.00. THEME 4: IMMUNITY TO INFLUENZA • Jackie Katz (Centers for Disease Control and Prevention, Atlanta, USA): The immune response to influenza infection • Rebecca J. Cox (University of Bergen, Norway): Immune correlates of protection against influenza 14.30 - 18.30. THEME 5: INFLUENZA VACCINES • Otfried Kistner (Baxter Innovation GmbH): Inactivated vaccines • John Treanor (University of Rochester Medical Center, USA): Live attenuated vaccines • Nathalie Landry (Médicago Inc., Québec, Canada): Plant-based influenza vaccines THURSDAY 19 JULY 2012 09.00 - 13.00. THEME 6: ANTIVIRALS AND OTHER THERAPIES • Anna Teresa Palamara (Sapienza University of Rome, Italy): Redox-regulated intracellular pathways as new potential targets for anti-influenza drugs • David S. Fedson (Sergy Haut, France): Treating the host response in severe disease • Alan Hay (National Institute for Medical Research, London, UK): Influenza antivirals 14.30 - 16.30. THEME 7: REGULATORY PRACTICES AND CHALLENGES • Leonoor Wijnans (Medicines Evaluation Board, The Netherlands): Regulatory challenges for influenza vaccines 16.30 - 18.00. Students' presentations: Binod Kumar (University of Delhi, India); Martina Kurz (Marinomed, Vienna, Austria); Mahesh Moorthy (Christian Medical College, Vellore, India); Sophie Newitt (Health Protection Agency, East Midlands, UK); Daniele Perini (VisMederi srl, Siena, Italy); Carolina de Queiroz

Sacramento (Oswaldo Cruz Institute, Rio de Janeiro, Brazil); Kairat Tabinov (Research institute for biological safety problems, Kazakhstan); Gabriele Vaccari (Istituto Superiore di Sanità, Roma, Italy)
FRIDAY 20 JULY 2012 09.00-10.30. THEME 7: REGULATORY PRACTICES AND CHALLENGES (continued)
• John Wood (National Institute for Biological Standards and Control, Hertfordshire, UK - retired),
Licensing requirements and the importance of standardisation 10.30-12.30. THEME 5: INFLUENZA
VACCINES (continued) • Alan Shaw (VaxInnate Corporation, Cranbury, USA): New vaccine
technologies • 12.30 - 13.00 CLOSING REMARKS