

Optimmunize: Improving the beneficial effects of vaccines

Wellcome Genome Campus Conference Centre,
Hinxton, Cambridge

19 – 21 February 2020

Conference programme

Wednesday, 19 February

- 11:30-12:50 **Registration with lunch**
- 12:50-13:00 **Welcome and Introductions**
Programme Committee
- 13:00-14:30 **Session 1: Why the non-specific effects of vaccines are important**
Chair: Nigel Curtis
- 13:00 Opening note
Nigel Curtis
Melbourne University, Australia
- 13.10 Why the non-specific effects of vaccines are important
Peter Aaby
Bandim Health Project, Guinea-Bissau
- 13:30 Off target effects: the box is finally open but the contents are still
 confusing
Adam Finn
University of Bristol, UK
- 13:50 Q&A & discussion
- 14:30-15:30 **Keynote Lecture:**
Trained immunity: a memory for innate host defense
Mihai Netea
Radboud University, The Netherlands
- 15:30-16:00 **Afternoon Tea**
- 16:00-17:30 **Session 2: Potential non-specific effects of vaccines – evidence
 from clinical trials**
Chair: Sabra Klein
- 16:00 The Melbourne Infant Study: BCG for Allergy and Infection
 Reduction (MIS BAIR)
Nigel Curtis
Melbourne University, Australia

- 16:30 Repurposing of Vaccines: What is in a name?
Tobias Kollmann
Telethon Kids Institute, Australia
- 17:00 Immune system development varies according to age, location and anemia in African children
Danika Hill
Babraham Institute, UK
- 17:15 BCG skin reactions by 2 months of age are associated with better survival in infancy: A prospective observational study
Frederik Scholtz-Buchholzer
Bandim Health Project, Denmark
- 17:30-18:00 Lightning talks
- 18:00-19:00 **Poster Session I (odd numbers) with drinks reception**
- 19:00 Dinner

Thursday, 20 February

- 09:00-10:45 **Session 3: Effects of vaccines on immunity and the epigenome**
Chair: Mihai Netea
- 09:00 What have we learnt about BCG vaccination in the last 20 years? (and can we improve its efficacy?)
Hazel Dockrell
LSHTM, UK
- 09.30 Evidence for BCG-induced protection against heterologous infectious disease in Ugandan neonates: an investigator-blind randomised controlled trial.
Sarah Prentice
East and North Hertfordshire NHS Trust, UK
- 10.00 BCG and DTPw vaccination induce altered programmes of “trained” innate immunity in mice
David Lynn
South Australian Health and Medical Research Institute, Australia
- 10.15 Exploring the role of RORa on trained immunity in human monocytes
Gizem Kilic
Radboud University Medical Center, The Netherlands
- 10.30 Systemic bacterial burden of sepsis-challenged neonatal mice significantly associated with survival
Byron Brook
University of British Columbia, Canada
- 10:45-11:15 **Morning Coffee**

11:15-12:30

Session 4: Sex-differences in immunity and response to vaccines

Chair: Eleanor Fish

11:15 Age-associated sex differences in immunity to seasonal inactivated influenza vaccines

Sabra Klein

Johns Hopkins University, USA

11:45 Sex-differential effects of rabies vaccine on survival in young free-roaming dogs, a novel animal model for the study of non-specific effects of vaccines in high-mortality populations

Darryn Knobel

Ross University School of Veterinary Medicine, West Indies

12:15 Female-biased effects of aging on a chimeric hemagglutinin-based universal influenza virus vaccine in mice

Santosh Dhakal

Johns Hopkins University, USA

12:30-14:00

Lunch

14:00-15:30

Session 5: Potential off-target use of vaccines

Chair: Christine Stabell Benn

14:00 BCG vaccines off target effects: so many good things with an emphasis on type I diabetes

Denise Faustman

Massachusetts General Hospital, USA

14:30 Precision adjuvants for next generation vaccines tailored to vulnerable populations

Ofer Levy

Harvard University, USA

15:00 BCG vaccination is associated with reduced malaria prevalence in children under the age of five in sub-Saharan Africa

Mike Berendsen

Bandim Health Project, Guinea-Bissau

15:15 Discussion: How can we use off-target effects to optimize vaccination?

15:30-16:00

Afternoon Tea

16:00-17:30

Session 6: Conference Q&A

Chair: Christine Stabell Benn

Young investigators (≤ 10 yrs post last degree (PhD, MD) will be asked to provide one critical question related to the conference subject when registering. The organizers will select the 2 best abstracts to be presented during this session. In addition, the organizers will select the 5 most thought provoking questions, and they will be discussed in a subsequent panel session that will include relevant speakers and the young researchers who posed the critical questions.

- 17:30-18:00 Lightning talks
- 18:00-19:00 **Poster Session 2 (even numbers) with drinks reception**
- 19:00 **Dinner**

Friday, 21 February

- 09:00-10:00 **Session 7: Vaccination of the elderly**
Chair: Sarah Prentice
- 09:00 The impact of immunosenescence on immune responses after influenza vaccination in older individuals
Inna Ovsyannikova,
Mayo Clinic, USA
- 09:20 Evidence for immunomodulatory effects of vaccination in aging Australians
Katie Flanagan
Monash University, Australia
- 09:40 Panel discussion:
Can vaccines be used to combat immunosenescence?
- 10:00-10:30 **Session 8: Non-specific effects of vaccines: a complex and controversial topic**
Chair: Eleanor Fish
- 10:00 Non-specific effects of vaccines: Complex and controversial...and a challenge for current vaccine paradigms
Rebecca Chandler
Uppsala Monitoring Centre, Sweden
- 10:15 Discussion
- 10:30-10:45 **Morning Coffee**
- 10:45-12:45 **Session 9: Looking toward the future: New vaccines/testing products in pipeline**
Chair: Rebecca Chandler
- 10:45 Specific and off-target effects of novel live attenuated pertussis vaccine
Camille Loch
Institute Pasteur, France

- 11:15 Impact of adjuvants, sex, and the microbiome on SIV-vaccine-induced immunity and protective efficacy in rhesus macaques
Marjorie Robert-Guroff
National Cancer Institute, USA
- 11:45 Vertically transferred immunity in neonates: Mothers, mechanisms and mediators
Petra Arck
University Medical Center Hamburg-Eppendorf, Germany
- 12:15 New live attenuated tuberculosis vaccine MTBVAC induces trained immunity and confers protection against experimental lethal pneumonia
Jorge Dominguez Andres
Radboud University Medical Center, The Netherlands
- 12:30 MVI30 as a Trained Immunity-based Vaccine, clinical implications and mechanism of action
Laura Conejero
Immunotek, Spain

12:45-12:55 Closing remarks

12:55 -13:15 **Lunch**

13:15 **Coach depart to Heathrow Airport via Stansted Airport**
13:30 **Coach departs to Cambridge City Centre and Train Station**