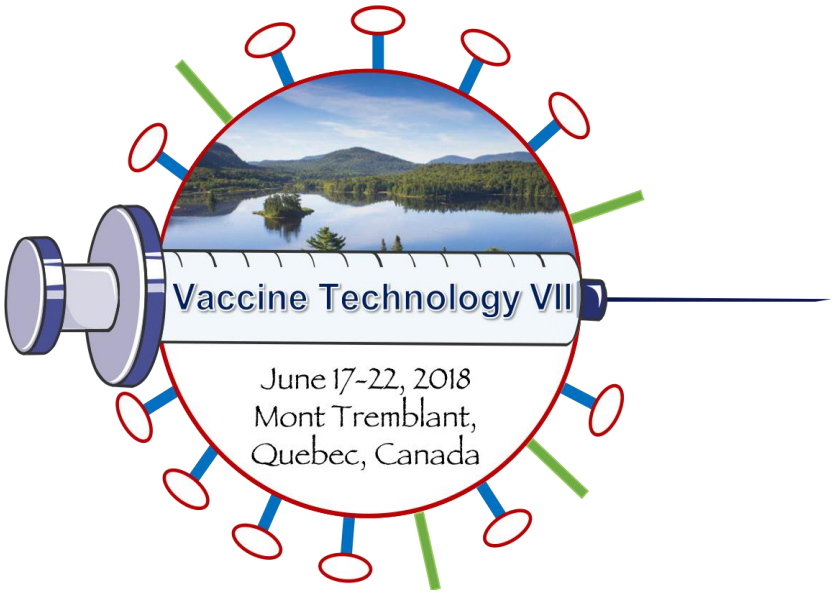
Program

Vaccine Technology VII



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Engineering Conferences International (ECI) is a not-for-profit global engineering conferences program, originally established in 1962, that provides opportunities for the exploration of problems and issues of concern to engineers and scientists from many disciplines.

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Brian Ward, (Medicago, Inc.)

Xuefeng Yu (CanSincoBiologics, Inc.)

Vaccine Technology© Conferences History

An ECI Conference Series

Vaccine Technology I (2006)
Barry C. Buckland, John G. Aunins, Emilio A. Emini, and Jerald C. Sadoff
Puerto Vallarta, Mexico

Vaccine Technology II (2008)
Barry C. Buckland, John G. Aunins, Paula Marques Alves, and Kathrin Jansen
Albufeira, Algarve, Portugal

Vaccine Technology III (2010)
Barry C. Buckland, John G. Aunins, Paula Marques Alves, and Kathrin Jansen
Nuevo Vallarta, Mexico

Vaccine Technology IV (2012)
Barry C. Buckland, John G. Aunins, Paula Marques Alves, and Kathrin Jansen
Albufeira, Algarve, Portugal

Vaccine Technology V (2014)
Laura Palomares, Manon Cox, John Aunins and Kathrin Jansen
Playa del Carmen, Mexico

Vaccine Technology VI (2016)
Laura Palomares, Tarit Mukhopadhyay, Manon Cox and Nathalie Garçon
Albufeira, Portugal

Welcome from the VT VII Chairs

Welcome everyone to Mont-Tremblant, a constantly evolving destination bringing nice surprises within a Natural Park in the Laurentide's region, for the 7th Vaccine Technology (VT-VII) conference! It is enthusing that our meeting is being established as the premiere vaccine technology conference and contributes to informing on the scientific and technological trends in developing vaccines to meet the global needs of public health priorities.

Throughout this time, the VT series has been the main forum where industry, academia, public health authorities and philanthropic organizations meet to facilitate linkages and enable collaborations between all regions of the world.

With over 200 participants from 27 countries on 5 continents, this year's meeting is certainly one of the largest VT-ECI conferences ever, and one of the most diverse to date involving many students, academics, government, international bodies and industry representatives to invest in the future and sustain the growth of the vaccine field as a global priority. We will have the largest number of participants from low and medium income countries ever to attend the meeting and this is made possible by the generous sponsorship from the Bill and Melinda Gates Foundation. In addition, the kind sponsorship of our industry partners enabled the attendance a large number of academics and students.

The conference program includes more than 45 oral presentations, two keynote addresses, and six lead lectures. In addition, we have four thematic workshops. The first workshop titled: "Meet the funders for Global Health" recognize the important theme of funding for sustainability of vaccine development for global interventions. Other workshops aim to highlight technical insights in cell and process engineering, -omics tools and analytics.

As has been the tradition and a key success factor of this conference series, a significant amount of time has been allocated to poster sessions. More than 90 posters are presented, and ten short talks have been selected from these posters to underline the important topics covered. All participants are strongly encouraged to take full advantage of this opportunity to further discuss the excellent work that will be presented during the oral and poster sessions. To encourage discussion and debate, a reception will be held during the evening poster session.

Innovation in antigen design and deployment of advanced vaccine technologies are essential to strengthen the public health vaccination policies and support the preparedness plans against emerging and re-emerging infectious diseases. We find ourselves now in a position with the ability to respond to these pathogens of epidemic potential; the debate today is how best to respond – and will be a test of both the technical means and the political will.

Recently, the true potential of therapeutic vaccines was realized by the patients and health authorities are challenging the field to speed up the development of these new medical

interventions that harness the human immune system. With this in mind, we have put together a program that will present the new directions, recognize the challenges, and build on the successes in the vaccine development arena, as shared by leading academic, institutional and industrial experts.

The success of this conference is fundamentally determined by the active engagement each one of you in the dialogue that is enabled by this conference venue, sharing your thoughts and expertise with other participants as we collectively contribute to the accelerated development of the vaccine sciences and technologies and make them available globally. For those of you returning to the VT conference series – welcome back. For those first-time participants – welcome! This is a unique opportunity to rub shoulders with some of the leaders in the vaccine field – so we warmly encourage you to make a friend!

Finally, we would like to thank all the oral session chairs, workshop program session chairs, poster session chairs, and scientific committee members for their time and efforts. All have worked with remarkable dedication to put together a high-quality program. And, once again, thanks to the generous contributions from our sponsors for enabling an outstanding international attendance.

Special thanks to Barbara Hickernell and her dedicated team at ECI, particularly Kathy Chan, Kevin Korpics, and Tressa D'Ottavio for their tireless help and enormous assistance with the logistics and numerous details. Many thanks to John Aunins, for his friendly help in supporting the conference as ECI liaison for this conference. We also want to thank the many student volunteers, and Fairmont Hotel Mont-Tremblant staff, for helping make this meeting a success.

Once again, welcome to Mont-Tremblant and the Laurentide's region in Quebec.
We look forward to meeting each of you personally.

Amine Kamen, Nathalie Garcon, Charles Lutsch and Tarit Mukhopadhyay
Chairs, Vaccine Technology VII Conference

Conference Sponsors

Bill & Melinda Gates Foundation

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***Vaccines* Journal**

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Conference program

Time	Sunday June 17	Monday June 18	Tuesday June 19	Wednesday June 20	Thursday June 21	Friday June 22
7:30		Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
8:00						
8:30		**Session 1**	**Session 4**	**Session 5**	Session 7	Checkout
9:00		Technological and clinical advances in vaccinology (I)	Bioprocessing advances in vaccine manufacturing (II)	Formulation and delivery	Therapeutic vaccines	
9:30		*Lead speaker: Dr. Barney*	*Lead speaker: Dr. David Kaslow*	*Lead speaker: Dr. Jean Haensler*	*Lead speaker: Dr. John Bell*	
10:00						
10:30		Coffee break	Coffee break	Coffee break	Coffee break	
11:00		**Session 2**	Session 4 *cont.*	**Session 6**	**Session 8**	
11:30		Technological and clinical advances in vaccinology (II)		Capacity building and intervention plan (I)	Short talks selected from poster abstracts	
12:00			**Workshop 3**		**Poster session 3**	
12:30			Genomics for vaccines			
13:00		Lunch		Lunch	Grazing lunch	
13:30			Boxed lunch			
14:00	Registration and refreshments	**Workshop 2**		**Workshop 4**		
14:30		Manufacturing equipment	External activities	Analytical tools		
15:00						
15:30		Coffee break	Networking	Coffee break	Coffee break	
16:00		**Session 3**		**Session 6**	**Session 9**	
16:30	**Workshop 1**	Bioprocessing advances in vaccine manufacturing (I)		Capacity building and intervention plan (II)	Bioprocessing advances in vaccine manufacturing (III)	
17:00	Innovation in global health	*Lead speaker: Manon Cox*		*Lead speaker: Dr. Jerome Kim*		
17:30					Networking	
18:00						
18:30		Dinner		Dinner		
19:00	**Opening keynote**				**Closing Keynote**	
19:30	Dr. Alejandro Cravioto		Dinner on your own		David Robinson	
20:00	Dinner	**Poster session 1**		**Poster session 2**	Banquet	
20:30						
21:00						
21:30						

Room locations and notes

- General Sessions and Workshops will be held in Mali III-IV.
- Poster Sessions will be in Mali I-II.
- Meals will be in Soutana 1-2. The conference banquet location will be announced on site.
- The ECI office is the Meeting Planner Office.
- Audio, still photo and video recording by any device (e.g., cameras, cell phones, laptops, PDAs, watches) is strictly prohibited during the technical sessions, unless the author and ECI have granted prior permission.
- Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).
- Speakers – Please leave discussion time as previously directed by your session chair.
- Please do not smoke at any conference functions.
- Turn your mobile telephones to vibrate or off during technical sessions.
- Please write your name on your program so that it can be returned to you if lost or misplaced.
- After the conference, ECI will send an updated participant list to all participants. Please check your listing now and if it needs updating, you may correct it at any time by logging into your ECI account.
- Emergency Contact Information: Because of privacy concerns, ECI does not collect or maintain emergency contact information for conference participants. If you would like to have this information available in case of emergency, please use the reverse side of your name badge.

Sunday, June 17, 2018

14:00 – 16:00 Conference check-in

16:30 – 18:30 **Workshop 1: Meet the Funders in Global Health**

Moderators: Vivian Hsu, Bill & Melinda Gates Foundation;
Torey de Rozario, Bill & Melinda Gates Foundation;
Tarit Mukhopadhyay, University College London

Objectives:

- To connect scientists from academia and industry to organizations who fund innovations in Global Health, and to provide greater insight on how to gain access to those funding streams
- To hear from Bill & Melinda Gates Foundation grantees on their experience in working with a funding organization and to hear an overview of their funded technology
- Ultimately, we aim to support continued funding of innovative technology to further vaccine development and manufacturing for global needs

Opening
Vivian Hsu, Bill & Melinda Gates Foundation

Meet the funders

1. Bill & Melinda Gates Foundation (BMGF), Torey de Rozario
2. Global Health Investment Fund (GHIF), Glenn Rockman
3. The National Institute for Innovations in Manufacturing (NIIMBL), Chris Roberts
4. Coalition for Epidemic Preparedness Innovations (CEPI), Simone Blayer

BMGF Grantees

1. UCL- ULTRA Platform Grant, Tarit Mukhopadhyay & Lourdes Velez Suberbie
2. University of Kansas Center for Research- MSA, David Volkin
3. Vaxess- Microneedles Platform Technology Grant, Michael Schrader

Open discussion
Questions via Sli.do. Go to address www.sli.do and use event code #G330.

Wrap-up

19:00 – 20:00 **Opening Keynote**
The impact of vaccines worldwide and the challenges to achieve universal immunization
Dr. Alejandro Cravioto, Chair of WHO Strategic Advisory Group of Experts (SAGE) and Faculty Medicine of the Universidad National Autonoma de Mexico

20:00 – 22:00 Opening Reception Dinner

Monday, June 18, 2018

07:00 – 08:30 Breakfast

08:30 – 10:30 **Session 1: Technological and Clinical Avances in Vaccinology (I)**
Session Chairs: David Weiner, The Wistar Institute, USA;
Frank Bähner, CureVac AG, Germany

08:30 – 09:10 *Lead talk:*
Structure-based vaccines for respiratory viruses
Dr. Barney Graham, Deputy Director of the Vaccine Research Center of the NIH, USA

09:10 – 09:35 **mRNA Vaccines: On the progress from promise to reality**
Hari Pujar, Moderna, USA

09:35 – 10:00 **RNActive®-An mRNA-based vaccine technology for next generation prophylactic vaccines**
Edith Jasny, Senior Scientist CureVac AG, Tübingen, Germany

10:00 – 10:25 **Virus-like particle vaccines against BK and JC polyomaviruses**
Diana V. Pastrana, NCI/NIH, USA

10:25 – 10:55 Coffee break *(Sponsored by GE Healthcare and GSK)*

10:55 – 12:35 **Session 2: Technological and Clinical Advances in Vaccinology (II)**
Session Chairs: Udo Reichl, Max Planck Institute, Germany;
Hari Pujar, Moderna Therapeutics, USA

10:55 – 11:20 **Molecular quality engineering for low cost vaccine production**
Kerry Routenberg Love, Koch Cancer Institute at MIT, USA

11:20 – 11:45 **Single-cell analysis uncovers a novel influenza A virus-derived defective interfering particle for antiviral therapy**
Sascha Young Kupke, Max Planck Institute for Dynamics of Complex Technical Systems Magdeburg, Germany

11:45 – 12:10 **Persistent antibody clonotypes dominate the serum response to influenza following repeated vaccination over multiple years**
Jiwon Lee, University of Texas at Austin, USA

12:10 – 12:35 **Pan-HA antibodies confer protection in mice against influenza**
Aziza Manceur, National Research Council, Canada

12:35 – 14:00 Lunch

14:00 – 15:30 **Workshop 2: Advanced Technologies, Equipment and Instrumentation for Vaccine Manufacturing**
Moderators: Charles Lutsch, Sanofi-Pasteur, France;
Laura Palomares, IBT, UNAM, Mexico

Short presentations:

Optimisation of a flocculation step using a scale-down model with 3D-printed impellers and focused beam reflectance measurement (FBRM) particle-size monitoring.
Francis DiGennaro, Merck & Co., Inc., USA

CRISPR-dCAS9 for controlling Baculovirus replication and increasing production of Virus-Like particles
Mark Bruder, University of Waterloo, Canada

Monday, June 18, 2018 (continued)

EXPISF - A chemically-defined Baculovirus-based expression system for enhanced protein production in SP9 Cells.
Maya Yovcheva, Thermo Fischer Scientific Inc., USA

Fully automated high-throughput process development for the novel purification of Rotavirus Vaccines.
Shaleem I. Jacob, University College London, UK

Influenza virus capture using membrane chromatography: Improving selectivity by matrix design and pseudo-affinity ligand interactions
Stefan Fischer-Frühholtz, Sartorius Stedim Biotech, Germany

A scalable adenovirus production process, from cell culture to purified bulk
Åsa Hagner-McWhirter, GE Healthcare, Sweden

Panel Discussion (all speakers)

15:30 – 16:00 Coffee break *(Sponsored by McGill University - Faculty of Engineering)*

16:00 – 18:20 **Session 3: Bioprocessing Advances in Vaccine Manufacturing (I)**
(Sponsored by Sartorius Stedim Biotech GmbH)
Session Chairs: Linda Lua, Queensland University, Australia; Richard Peluso, Merck and Co., USA

16:00 – 16:40 *Lead talk:*
The story of a successful biotech (ad)venture: The development of Flublok
Manon Cox, NextWaveBio, USA

16:40 – 17:05 **Accelerating bioprocess development by analysis of all available data: A USP case study**
Diego Suarez-Zuluaga, Intravacc, Netherlands

17:05 – 17:30 **Purifying viruses with a sheet of paper: Single-use steric exclusion chromatography as a capture platform for vaccine candidates**
Pavel Marichal-Gallardo, Max Planck Institute for Dynamics of Complex Technical Systems, Germany

17:30 – 17:55 **Vero SF technology platform: Strategy for rapid and effective vaccine development; flavivirus vaccines case study**
Nicolas Sève, Sanofi Pasteur, France

17:55 – 18:20 **Bioprocess intensification for production of a Peste des petits ruminants virus (PPRV) vaccine**
Manuel J.T. Carrondo, iBET, Portugal

18:30 – 20:00 Dinner

20:00 – 22:00 **Poster session 1** and Social Hour

Tuesday, June 19, 2018

07:00 – 08:30 Breakfast

08:30 – 10:30 **Session 4: Bioprocessing Advances in Vaccine Manufacturing (II)**
(Sponsored by Takeda Vaccines, Inc.)
Session Chairs: Francesc Godia, UAB, Spain;
Manon Cox, NextWaveBio, USA

08:30 – 09:10 *Lead talk:*
Developing vaccines for low resource settings through product development partnerships (PDPs)
Dr. David Kaslow, Vice President, Essential Medicines, and Director, the PATH Center for Vaccine Innovation and Access, USA

09:10 – 09:30 **Continuous purification of cell culture-derived influenza A virus particles through pseudo-affinity membrane chromatography**
A. Raquel Fortuna, Max Planck Institute for Dynamics of Complex Technical Systems, Germany

09:30 – 09:50 **Integrated scalable cyto-technology for recombinant protein bioprocessing**
J. Christopher Love, Koch Institute at MIT, USA

09:50 – 10:10 **Low-cost cell-based production platform for seasonal and pandemic influenza vaccines**
Alan Yung-Chih Hu, NIIDV/NHRI, Taiwan

10:10 – 10:30 **Polymer grafted chromatography media for direct capture and high-resolution purification of enveloped virus-like particles**
Patricia Pereira Aguilar, University of Natural Resources and Life Sciences Vienna, Austria

10:30 – 11:00 Coffee break *(Sponsored by Medicago and Sanofi Pasteur)*

11:00 – 11:20 **Virus-like particles (VLPs) as a platform for the development of yellow fever and Zika virus vaccine candidate**
Renata Alvim, Federal University of Rio de Janeiro (UFRJ), Brazil

11:20 – 11:40 **Manufacturing strategies for sustainable supply of ultra-low cost vaccines for global health**
Tania Pereira Chilima, University College London, United Kingdom

11:40 – 12:00 **A tailor-made purification strategy for oncolytic measles viruses using membrane-based processes**
Daniel Loewe, University of Applied Sciences Mittelhessen, Germany

12:00 Boxed lunches available for pick up

12:20 – 13:40 **Workshop 3: Genomics and Systems Biotechnology in Vaccine Development**
Moderators: Wei-Shou Hu, University of Minnesota, USA;
Gautam Sanyal, Vaccine Analytics, USA

Short presentations:

Options and challenges for systems biology driven cell line development in virus production
Udo Reichl, Max-Planck Institute for Dynamics of Complex Technical Systems, Germany

Acceleration and intensification of influenza pandemic seed stock candidate vaccine production from HA and NA sequence identification
Amine Kamen, McGill University, Canada

Tuesday, June 19, 2018 (continued)

FluChip-8G: Influenza Genotyping Assay for Enhanced Surveillance and Pandemic Preparedness
Kathy Rowlen, InDevR, USA

Molecular quality engineering for low cost vaccine production
Kerry Love, Massachusetts Institute of Technology, USA

High-resolution systems biology modeling of human-virus interactions
Brandon Xia, McGill University, Canada

Panel Discussion (all speakers)

External activities

Networking

Dinner on your own

Wednesday, June 20, 2018

07:00 – 08:30	Breakfast
08:30 – 10:30	**Session 5: Formulation and Delivering Vaccines** Session Chairs: Nathalie Garcon, Bioaster, France; Lakshmi Krishnan, NRC, Canada
08:30 – 09:10	*Lead talk:* **Formulation considerations for the development of adjuvanted vaccines** Dr. Jean Haensler, Director, Antigen & Adjuvant Design, Production and Characterization Research Department, Sanofi Pasteur, Lyon, France
09:10 – 09:30	**Intradermal administration of synthetic DNA vaccines induce robust cellular and humoral immune responses** Jean D. Boyer, Inovio Pharmaceuticals Inc., USA
09:30 – 09:50	**Thermostabilization of adenovirus-vectored vaccines, removing the need for continual cold-chain storage** Alexander Douglas, Jenner Institute, University of Oxford, United Kingdom
09:50 – 10:10	**Safety and biodistribution of sulfated archaeal glycolipid archaeosomes as vaccine adjuvants** Mike McCluskie, National Research Council, Canada
10:10 – 10:30	**Recombinant hemagglutinin proteins formulated in a novel PELC/CpG adjuvant for H7N9 subunit vaccine development** Suh-Chin Wu, Institute of Biotechnology, National Tsing Hua University, Taiwan
10:30 – 11:00	Coffee break *(Sponsored by Intravacc)*
11:00 – 13:00	**Session 6: Capacity Building and Intervention Plan for Emerging and Re-emerging Infectious Diseases (I)** Session Chairs: Amadou A. Sall, Institute Pasteur Dakar, Senegal; Erin Sparrow, WHO, Geneva; Simone Blayer, CEPI, UK
11:00 – 11:20	**Accelerated process development and stockpile for MERS, LASSA AND NIPAH viral vaccine** Simone Blayer, CEPI, UK
11:20 – 11:40	**Rapid response pipeline for stabilized subunit vaccines** Keith Chappell, University of Queensland, Australia
11:40 – 12:00	**Using the AdVac® vaccine manufacturing platform for rapid response to infectious disease outbreaks** Guus Erkens, Janssen Vaccines, Leiden, Netherlands
12:00 – 12:20	**Preclinical development of filovirus and flavivirus vaccines based on recombinant insect cell expressed subunits** Axel T. Lehrer, University of Hawaii, USA
12:20 – 12:40	**Development of Pan-filovirus vaccine against Ebola and Marburg virus challenges** Xiangguo Qiu, Public Health Agency of Canada, Canada
12:40 – 13:00	**High-titer rapid response platform for epidemic preparedness** José Castillo, Univercells, Belgium
13:00 – 14:00	Lunch

Wednesday, June 20, 2018 (continued)

14:00 – 15:30 **Workshop 4: Analytical Tools in Vaccine Development**
Moderators: Nathalie Garcon, Bioaster, France;
Manon Cox, NextWaveBio, USA

Short presentations:

Structure-based vaccine design by electron microscopy
Bridget Carragher, NanoImaging Services Inc., USA

Strategies to overcome the age-old problem of immunosenescence
Brian Schanen, Sanofi, USA

VaxArray NA reagent kit
Kathy Rowlen, InDevR, USA

Laser force cytology for rapid quantification of viral infectivity
Sean J. Hart, LumaCyte, USA

Panel Discussion (all speakers)

15:30 – 16:00 Coffee break *(Sponsored by LumaCyte)*

16:00 – 18:30 **Session 6: Capacity Building and Intervention Plan for Emerging and Re-emerging Infectious Diseases (II)**
Session Chairs: Amadou A. Sall, Institute Pasteur Dakar, Senegal;
Erin Sparrow, WHO, Geneva;
Simone Blayer, CEPI

16:00 – 16:40 *Lead talk:*
Vaccines for poverty. Associated infection diseases: Accessing innovation
Jerome Kim, Director-General International Vaccine Institute, Seoul, South Korea

16:40 – 17:00 **Future prospects and application for the development of adenovirus-based vaccine**
Tao Zhu, Cansino Biologics, China

17:00 – 17:20 **Adjuvant manufacturing scale-up and technology transfer**
Christopher Fox, IDRI, USA

17:20 – 17:40 **A vaccine for Ebola virus – approaches and results of accelerated process development and characterization studies**
Randi Saunders, Merck & Co, USA

17:40 – 18:00 **Product development and programmatic implementation of TYPBAR TCV® and ROTAVAC® vaccines**
V. K. Srinivas, Bharat Biotech International Limited, India

18:30 – 20:00 Dinner

20:00 – 22:00 **Poster session 2** and Social Hour

Thursday, June 21, 2018

07:00 – 08:30 Breakfast

08:30 – 10:30 **Session 7: Therapeutic Vaccines**
Session Chairs: Barry Buckland, BioLogicB, USA;
Paula Alves, IBET, Portugal

08:30 – 09:10 *Lead talk:*
A novel vaccinia virus backbone for the delivery of immunotherapeutic genes
John Bell, Ottawa Hospital Research Institute, Ottawa, Canada

09:10 – 09:30 **HER2 cancer vaccine optimization by combining *Drosophila* S2 insect cell manufacturing with a novel VLP-display technology**
Thomas Jørgensen, ExpreS2ion Biotechnologies, Denmark

09:30 – 09:50 **Rapid design/development and clinical deployment of synthetic DNA vaccine technology for difficult immune targets**
David Weiner, The Wistar Institute, USA

09:50 – 10:10 **Development of an analytical platform for delivery of recombinant oncolytic viruses**
Gautam Sanyal, Vaccine Analytics LLC, USA

10:10 – 10:30 **Leveraging vectored vaccine candidates manufacturing to GMP compatible bioprocesse**
Cristina Peixoto, iBET, Portugal

10:30 – 11:00 Coffee break *(Sponsored by Merck and Co., Inc.)*

11:00 – 12:00 **Session 8: Short talks selected from poster abstracts**
(Sponsored by Thermo Fisher Scientific)
Session Chairs: Yvonne Thomassen, Intravac, Netherlands;
Ernesto Chico, CIM, Cuba;
Marc Aucoin, University of Waterloo, Canada;
Amine Kamen, McGill University, Canada

Purification of flavivirus VLPs by a two-step chromatographic process
Matheus Souza, Federal University of Rio de Janeiro (UFRJ), Brazil

Flavivirus production in perfusion processes using the EB66® cell line
Alexander Nikolay, Max Planck Institute for Dynamics of Complex Technical Systems, Germany

Production and characterization of HER2-displaying budded virus-like particles and their potential as cancer vaccines
Lisa Nika, University of Natural Resources and Life Sciences, Vienna, Austria

Virus-like particles: A flexible platform for universal influenza vaccine development
Sarah Slack, University College London, United Kingdom

Rapid virus titration using flow cytometry
Steve George, Sanofi Pasteur, Canada

Defining the multiplicity and type of infection for the production of Zaire Ebola virus-like particles in the insect cell baculovirus expression system
Ana Ruth Pastor, Instituto de Biotecnologia-UNAM, Mexico

Combining novel and traditional approaches of vaccine development to overcome the challenges of first-in-human trial for Group A Streptococcus
Elodie Burlet, VaxForm, USA

Development of suspensions adapted Vero cell culture process for production of viruses
Chun Fang Shen, National Research Council, Canada

Thursday, June 21, 2018 (continued)

A pre-fusion, trimeric subunit influenza HA-based vaccine elicits cross-protection between highly divergent influenza A viruses
Christopher McMillan, University of Queensland, Australia

HER1 therapeutic cancer vaccine: An active immunotherapy treatment for patients with tumors expressing the receptor of epidermal growth factor (EGF-R)
Eduardo Suarez, CIM, Cuba

12:00 – 14:30 **Poster session 3**

Grazing lunch

14:30 – 15:00 Coffee break *(Sponsored by NIIMBL)*

15:00 – 16:00 **Session 9: Bioprocessing Advances in Vaccine Manufacturing (III)**
Session Chairs: Linda Lua, University of Queensland, Australia;
Richard Peluso, Merck and Co., USA

15:00 – 15:20 **Production of bacterial outer membrane vesicles as vaccine platform**
Matthias Gerritzen, Intravacc, Wageningen University and Research, Netherlands

15:20 – 15:40 **Extended gene expression for HIV-1 VLPs scale-up and production enhancement using shRNA and chemical additives**
Laura Cervera Gracia, Universitat Autònoma de Barcelona, Spain

15:40 – 16:00 **Development of scalable manufacturing process and GMP-compatible formulation for a novel recombinant schistosomiasis vaccine**
Damon R. Asher, MilliporeSigma, USA

16:30 – 17:30 **Closing Keynote**
Innovations in global health: What has been accomplished, what is on the horizon and where are more investments needed
David Robinson, Deputy Director CMC Vaccines Development and Surveillance at the Bill & Melinda Gates Foundation, USA

19:00 – 20:00 Reception

20:00 – 22:00 Banquet

Friday, June 22, 2018

07:00 – 08:30	Breakfast
08:30 – 10:00	Check out and departures

Poster Presentations

1. **Stability evaluation of inactivated influenza H7N9 vaccines derived from adhesion and suspension MDCK cells**
   Alan Yung-Chih Hu, NIIDV/NHRI, Taiwan

2. **Rapid, cost-effective and scalable gmp-compliant simian adenovirus-vectored vaccine production for early-phase clinical trials using entirely disposable product-contact components**
   Alexander Douglas, University of Oxford, United Kingdom

3. **Flavivirus production in perfusion processes using the EB66® cell line**
   Alexander Nikolay, Max Planck Institute for Dynamics of Complex Technical Systems, Germany

4. **Latest advancements in process intensification to support global demand for affordable vaccines**
   Alfred Luitjens, Batavia Biosciences, Netherlands

5. **Proteomic characterization of influenza H1N1 Gag virus-like particles and extracellular vesicles produced in HEK-293SF**
   Alina Venereo-Sanchez, McGill University, Canada

6. **Implementation of a process-scale adenovirus purification with a single-use platform**
   Amélie Boulais, Sartorius Stedim Biotech, France

7. **Membrane chromatography cassettes for bind and elute applications of viruses and large proteins**
   Stefan Fischer-Frühholz, Sartorius Stedim Biotech, France

8. **Influenza virus capture using membrane chromatography: Improving selectivity by matrix design and pseudo-affinity ligand interactions**
   Stefan Fischer-Frühholz, Sartorius Stedim Biotech, France

9. **Defining the multiplicity and type of infection for the production of Zaire Ebola Virus-like particles in the insect cell baculovirus expression system**
   Ana Ruth Pastor, Instituto de Biotecnología, UNAM, Mexico

10. **Structure-based vaccine design by electron microscopy**
    Anette Schneemann, NanoImaging Services, USA

11. **Reducing risks with a serum-free medium for MRC-5 based vaccine production**
    Anna-Barbara Hachmann, Thermo Fisher Scientific, Inc., USA

12. **Process economical effects of implementation of ready-to-use micro carriers in cell-based virus vaccine production**
    Nicolas Seve, Anne Marie Beauchard, Sanofi Pasteur, France

13. **Bioprocess engineering of insect cells for accelerating vaccines development**
    Antonio Roldao, iBET, Portugal

14. **A scalable adenovirus production process, from cell culture to purified bulk**
    Åsa Hagner-McWhirter, GE Healthcare, Sweden

15. **Vaccine protein stabilization in silica**
Aswin Doekhie, University of Bath, United Kingdom

16. **Experimental and computational fluid dynamics studies of adherent cells on microcarriers in an ambr® 250 bioreactor**
Barney Zoro, Sartorius Stedim Biotech, United Kingdom

17. **From bench scale to pilot plant operation: Business models and challenges in the biopharmaceutical industry in Brazil**
Beatriz de Castro Fialho, Bio-Manguinhos/FIOCRUZ, Brazil

18. **Immunization with Fc-based recombinant Epstein-Barr virus gp350 elicits potent neutralizing humoral immune response in a BALB/c mice model**
Bing-chun Zhao, Sun Yat-sen University Cancer Center, China

19. **Strategies to overcome the age-old problem of immunosenescence**
Brian Schanen, Sanofi Pasteur, USA

20. **Development and validation of a proprietary medium formulation for recombinant subunit vaccines by the Baculovirus Expression Vector System (BEVS)**
Catherine Cleuziat, Boehringer-Ingelheim, France

21. **Development of an animal-component free insect medium for the Baculovirus Expression Vector System (BEVS)**
Catherine Nguyen, Irvine Scientific, USA

22. **How to limit the use of serum in viral processes: A gibco perspective**
Céline Martin, Thermo Fisher Scientific, Inc., USA

23. **A pre-fusion, trimeric subunit influenza HA-based vaccine elicits cross-protection between highly divergent influenza A viruses**
Christopher McMillan, The University of Queensland, Australia

24. **Superinfection arising in stable lentiviral vector producer cell lines bearing Cocal-G envelope proteins**
Christopher Perry, University College London, United Kingdom

25. **Development of suspensions adapted Vero cell culture process for production of viruses**
Chun Fang Shen, National Research Council of Canada, Canada

26. **Addressing the challenges of influenza virus-like particles purification**
Cristina Peixoto, iBET, Portugal

27. **A genome-wide CRISPR screen to generate high-yield cell lines for pandemic influenza vaccine production**
David M. Sharon, McGill University, Canada

28. **Process development for a flexible vaccine vector platform based on recombinant life virus**
Dieter Palmberger, ACIB - Austrian Center of Industrial Biotechnology, Austria

29. **HER1 therapeutic cancer vaccine: An active immunotherapy treatment for patients with tumors expressing the receptor of epidermal growth factor (EGF-R)**
Eduardo Suarez, CIM, Cuba

30. **Combining novel and traditional approaches of vaccine development to overcome the challenges of first-in-human trial for Group A Streptococcus**
Elodie Burlet, VaxForm, USA

31. **Accelerated mass production of influenza virus seed stocks in HEK-293 suspension cell cultures by reverse genetics**
Ernest Milián, VCN Biosciences, Spain

32. **Implementation of a strategy to produce a broadly neutralizing monoclonal antibody against Zika and dengue viruses**
Esmeralda Cuevas-Juárez, Instituto de Biotecnología, UNAM, Mexico

33. **Optimization of a flocculation step using a scale-down model with 3D-printed impellers and Focused Beam Reflectance Measurement (FBRM) particle-size monitoring**
Francis DiGennaro, Merck & Co., Inc., USA

34. **Vaccination with viral vectors expressing NP, M1 and chimeric hemagglutinin induces broad protection against influenza virus challenge in mice**
Guha Asthagiri Arunkumar, Icahn School of Medicine at Mount Sinai, USA

35. **A new porcine suspension cell line (PBG.PK-21) provides efficient production for influenza and yellow fever vaccine viruses**
Gwendal Gränicher, Max Planck Institute for Dynamics of Complex Technical Systems, Germany

36. **HILIC-LC/MS method for non-derivatized amino acid analysis in spent media**
Hari Kosanam, Merck, USA

37. **Process development of chromatography-based purification on pandemic influenza virus-like particle based vaccines**
Hiachun Lai, NHRI, NTHU, Taiwan

38. **$\Delta\pi=0$ reverse osmosis enriches a high osmotic pressure solution from a low-titre fermentation broth to a saturated solution or salt form using RO and NF membranes**
Ho Nam Chang, Korea Advanced Institute of Science and Technology, South Korea

39. **Upstream process intensification using Viral Sensitizer technology**
Jean-Simon Diallo, Ottawa Hospital Research Institute, Canada

40. **Molecular understanding of the serum antibody repertoires after seasonal influenza vaccination among different age cohorts**
Jiwon Jung, The University of Texas at Austin, USA

41. **Formulation development of a recombinant protein based non-replicating rotavirus (NRRV) vaccine candidate: Antigen-adjuvant-preservative interactions**
John M. Hickey, University of Kansas, USA

42. **Disruptive micro-facility for affordable vaccine manufacturing**
José Castillo, Univercells, Belgium

43. **Orbital shaken bioreactor for influenza A virus production in high cell density cultivations**
Juliana Coronel, Max Planck Institute for Dynamics of Complex Technical Systems, Germany

44. **Vaxarray for hemagglutinin and neuraminidase potency testing of influenza vaccines**
Kathy Rowlen, InDevR, Inc., USA

45. **Vaxarray potency assay for rapid assessment of “pandemic” flu vaccines**
Kathy Rowlen, InDevR, Inc., USA

46. **Application of analytical characterization tools in process and formulation development of low cost vaccines using the ULTRA manufacturing platform**
Kawaljit Kaur, University of Kansas, USA

47. **Comparaison of rabies virus purification using different methods**
Khaled Trabelsi, Pasteur Institute of Tunisia, Tunisia

48. **Comparative transcriptome analysis of a Trichoplusia ni cell line reveals distinct host responses to intracellular and secreted protein products expressed by recombinant baculoviruses**
Krisztina Koczka, ACIB - Austrian Center of Industrial Biotechnology, Austria

49. **Generation and efficacy assessment of a chimeric antigen E2-CD154 as a marker Classical Swine Fever Virus subunit vaccine produced in HEK 293 and CHO K1 mammalian cells**
Lidice Méndez-Pérez, Center for Genetic Engineering and Biotechnology, Cuba

50. **Production and characterization of HER2-displaying budded virus-like particles and their potential as cancer vaccines**
Lisa Nika, University of Natural Resources and Life Sciences, Vienna, Austria

51. **Rapid fermentation optimization for vaccine development**
Lourdes Velez, University College London, United Kingdom

52. **CRISPR-dCAS9 for controlling baculovirus replication and increasing production of virus-like particles**
Mark Bruder, University of Waterloo, Canada

53. **Purification of flavivirus VLPs by a two-step chromatographic process**
Matheus Souza, Federal University of Rio de Janeiro (UFRJ), Brazil

54. **ExpiSf™: A chemically-defined baculovirus-based expression system for enhanced Protein production in Sf9 cells**
Maya Yovcheva, Thermo Fisher Scientific, Inc., USA

55. **Media formulation to support the growth of Vero cells in suspension**
Megan Logan, University of Waterloo, Canada

56. **WITHDRAWN**

57. **Accelerating the manufacture of glycoconjugate vaccines for pneumococcal disease**
Neha Patel, University College London, United Kingdom

58. **WITHDRAWN**

59. **Development of a vaccine production platform for poultry diseases in Africa: Newcastle Disease Virus non-replicative adenovirus-vectored vaccine**
Omar Farnos, McGill University, Canada

60. **Formulation and stabilization of a recombinant human Cytomegalovirus vector for use as a candidate vaccine for HIV-1**
Ozan S. Kumru, University of Kansas, USA

61. **Formulation development of a stable, orally delivered live human neonatal rotavirus (rv3-bb) vaccine candidate**
Prashant Kumar, University of Kansas, USA

62. **Case study: Single-use platform for complete process development and scale-up of an Adenovirus**
Rachel Legmann, Pall Life Sciences, USA

63. **Development and characterization of a murine hepatoma model expressing hepatitis C virus (HCV) non-structural antigens for evaluating HCV vaccines**
Kamran Haq, National Research Council Canada, Canada

64. **Case studies: Raman implementation for process lifecycle management in fermentation based processes**
Roberto Ortiz, Merck &Co., USA

65. **Adaptation of Vero cells to suspension culture and rabies virus production on different SERUM free media**
Samia Rourou, Institut Pasteur de Tunis, Tunisia

66. **Virus-like particles: A flexible platform for universal influenza vaccine development**
Sarah Slack, University College London, United Kingdom

67. **Characteristics of rVSV-ZEBOV production kinetics in HEK293 and Vero cells**
Sascha Kiesslich, McGill University, Canada

68. **Laser force cytology for rapid quantification of viral infectivity**
Sean J. Hart, LumaCyte, USA

69. **Fully automated high-throughput process development for the novel purification of rotavirus vaccines**
Shaleem I. Jacob, University College London, United Kingdom

70. **Affinity resin screening for optimal DSP – application to rotavirus vaccine production.**
Stephen A. Morris, University College London, United Kingdom

71. **Rapid virus titration using flow cytometry**
Steve George, Sanofi Pasteur, Canada

72. **Highly efficient influenza virus production: A MDCK-based high-cell-density process**
Thomas Bissinger, Max Planck Institute for Dynamics of Complex Technical Systems, Germany

73. **A clinically validated Drosophila S2 based vaccine platform for production of malaria vaccines**
Thomas Jørgensen, ExpreS2ion Biotechnologies, Denmark

74. **Technology transfer for local vaccine production in Argentina**
Valeria Brizzio, Sinergium Biotech, Argentina

75. **Real-time stability of a hepatitis E vaccine (Hecolin®) demonstrated with potency assays and multifaceted physicochemical methods**
Xiao Zhang, Sun Yat-Sen University Cancer Center, China

76. **Evaluating the effect of formulation on the uptake of a ZIKA subunit vaccine candidate by antigen-presenting cells**
Xiaoling Li, Envigo, United Kingdom

77. **Implications of MDCK cell heterogeneity in cell-based influenza vaccine production**
Xuping Liu, East China University of Science and Technology, China

78. **An outbreed mouse model of yellow fever for study of pathogenesis and development of vaccines and therapeutics**
Yakhya Dieye, Institut Pasteur de Dakar, Senegal

79. **Development of stabilizing formulations of a trivalent inactivated poliovirus vaccine in a dried state for delivery in the Nanopatch™ microprojection array**
Ying Wan, University of Kansas, USA

80. **Efficient influenza vaccine manufacturing: Single MDCK suspension cells in chemically defined medium**
Yixiao Wu, East China University of Science and Technology, China

81. **Analytical characterization and formulation assessment of model secretory-immunoglobulin-A (sIgAs) for their potential use as low cost, orally delivered sIgAs**
Yue (Martin) Hu, University of Kansas, USA

82. **Steric exclusion chromatography for the purification of recombinant baculovirus**
Daniel Loewe, University of Applied Sciences Mittelhessen, Germany

83. **Production and purification of Zika virus for an inactivated virus vaccine candidate**
Renato Mancini Astray, Instituto Butantan, Brazil

84. **Co-formulation of broadly neutralizing antibodies 3BNC117 and PGT121:Analytical challenges during pre-formulation characterization and storage stability studies**
Vineet Gupta, University of Kansas, USA